

The Cluster of Excellence „**Centre for Tactile Internet with Human-in-the-Loop**“ (CeTI) offers several positions as

Research associate

(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting at **January 1st, 2019** and fixed term for three years with the option to be extended (max. up to December 2025). The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG). The positions offer the chance to obtain further academic qualification (e.g. PhD or habilitation thesis). Balancing family and career is an important issue. The posts are basically suitable for candidates seeking part-time employment. Please note this request in your application.

We are looking for candidates with a university degree and if applicable a PhD degree in the respective scientific area with very good English language skills (cluster language), flexibility and the readiness to co-operate in a dynamic and international team.

Applications from women are particularly welcome. The same applies to people with disabilities. Technische Universität Dresden is a certified family-friendly university and offers a Dual Career Service.

Please submit your comprehensive application including the usual documentation by **December 8th, 2018** (stamped arrival date of the university central mail service applies) with the reference „**CeTI-position_...**“ (as given below) in the subject header preferably via the TU Dresden SecureMail Portal <https://securemail.tu-dresden.de> or S/MIME encrypted by sending it as a pdf document to positions@ceti.tu-dresden.de or by mail to:

TU Dresden, Sprecher des Exzellenzclusters CeTI, Herrn Prof. Frank H. P. Fitzek, Helmholtzstr. 10, 01069 Dresden, Germany. Please submit copies only as your application documents will not be returned. Expenses incurred in attending interviews cannot be reimbursed.



CeTI is a multidisciplinary cluster. This is why vacancies are presented in the following order:

- A) Faculty of Electrical and Computer Engineering
- B) Faculty of Computer Science
- C) Faculty of Psychology.

Professors from the respective faculties/chairs will supervise the positions to be filled. More details about the individual positions are given under www.ceti.one/career

A) Faculty of Electrical and Computer Engineering

CeTI-position_Altinsoy_1 – Chair of Acoustic and Haptic Engineering

1 Research associate / PhD student / Postdoc for haptic feedback for wearables with applications to augmented and virtual reality

Topic: Design and development of haptic sensors and actuators (Research room TP2)

CeTI-position_Altinsoy_2 – Chair of Acoustic and Haptic Engineering

1 Research associate / PhD student / Postdoc for 3D-audio-reproduction and integrative multimodal interface solutions for augmented human-CPS interaction

Topic: Design and development of perceptual audio reproduction systems and multimodal interaction in virtual environments (Research room K3)

CeTI-position_Ellinger_2 – Chair of Circuit Design and Network Theory

2 Research associates / PhD students for mm-wave transceiver

Topic: Design of wireless millimetre-wave transceiver chip for tactile on-body communications (Research room TP4)

CeTI-position_Fettweis_1 – Vodafone Chair Mobile Communications Systems

1 Research associate / PhD student / Postdoc for communication, coding, and compression

Topic: Co-design of wireless communications physical layer and control loops in networking with humans-in-the-loop (Research room TP3)

CeTI-position_Fitzek_1 – Deutsche Telekom Chair of Communication Networks

1 Research associate / PhD student / Postdoc for communication, coding, and compression

Topic: Low latency and resilient communication in meshed networks (Research room TP3)

CeTI-position_Fitzek_2 – Deutsche Telekom Chair of Communication Networks

1 Research associate / PhD student / Postdoc for SDN/NFV/ICN

Topic: Softwarerised communication networks for the Tactile Internet (Research room K2)

CeTI-position_Jorswieck_1 – Chair of Communications Theory

1 Research associate / PhD student for communication, coding and compression (Research room TP3)

Topic: Transceiver design and resource allocation for low latency and high reliability

CeTI-position_Mayr_1 – Chair for Highly Parallel VLSI-Systems and Neuro-Microelectronics

1 Research associate / PhD student / Postdoc for system design and application body computing hub

Topic: System design for wearable computing systems (Research room TP4)

Note that further details about the individual positions are given under www.ceti.one/career

B) Faculty of Computer Science

CeTI-position_Baier_1 – Chair of Algebraic and Logical Foundations of Computer Science

1 Research associate / PhD student / Postdoc for formal explanation techniques (Research room TP5)

Topic: Stochastic model-based explanation and causality

CeTI-position_Dachselt_1 – Chair of Multimedia Technology (Interactive Media Lab Dresden)

1 Research associate / PhD student / Postdoc for ubiquitous multimodal interaction

Topic: Designing and evaluating smart adaptive interaction and multimodal feedback / feedforward strategies with wearables in ubiquitous settings (Research rooms TP2 and K4)

CeTI-position_Fetzer_1 – Chair of Systems Engineering

1 Research associate / PhD student for a safe, secure, and scalable computing infrastructure that enables intuitive tactile interaction (Research rooms K2 and TP5)

Topic: Designing, building and evaluating a low latency, energy-efficient and secure platform

CeTI-position_Gumhold_1 – Chair of Computer Graphics and Visualisation

1 Research associate / PhD student for 3D scanning / 3D rendering

Topic: Develop 3D acquisition pipeline for fast and distributed capturing of virtual world model and support of real-time rendering for augmented reality technologies (Research room TP5)

CeTI-position_Strufe_1 – Chair of Privacy and Data Security

1 Research associate / PhD student for sensing/collection of data

Topic: Building demonstrators and evaluating the effect of CeTI technologies to promote skill acquisition (Research rooms U3 and K2)

Note that further details about the individual positions are given under www.ceti.one/career

C) Faculty of Psychology

CeTI-position_Kiebel_1 – Chair of Neuroimaging

1 Research associate / Postdoc for computational neuroscience (Research rooms TP1 and K4)

Topic: Computational modelling of sequences of goal-directed actions and multisensory integration

CeTI-position_Li_1 – Chair of Lifespan Developmental Neuroscience

1 Research associate / Postdoc for human multisensory perception (Research room TP1)

Topic: Psychophysical and neural mechanisms of goal-directed multisensory perception

CeTI-position_Li_2 – Chair of Lifespan Developmental Neuroscience

1 Research associate / PhD / Postdoc for augmented perception and action (Research rooms TP1 and K3)

Topic: Age and individual differences in perception and action in augmented and virtual reality

CeTI-position_Narciss_1 – Chair of Psychology of Learning and Instruction

1 Research associate / Postdoc for skill acquisition and learning (Research rooms TP1 and U3)

Topic: Skill acquisition and learning with CeTI technologies

CeTI-position_Pannasch_1 – Chair of Engineering Psychology and Applied Cognitive Research

1 Research associate / PostDoc for human-cyber-physical systems interaction (Research room K3)

Topic: Fundamental mechanisms governing interactions between humans and CPS

Note that further details about the individual positions are given under www.ceti.one/career

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: <https://tu-dresden.de/karriere/datenschutzhinweis>

A) Faculty of Electrical and Computer Engineering

CeTI-position_Altinsoy_1 – 1 Research associate / PhD student / Postdoc for haptic feedback for smart wearables with applications to augmented and virtual reality

Topic: Design and development of haptic sensors and actuators (Research room TP2)

Tasks: Your task will be the development and application of the low latency and low weight haptic feedback technologies. In the first step, the system requirements for the wearable applications will be determined. Different approaches, e.g. electromagnetic, electrostatic, electrodynamic, piezoelectric or ultrasound, will be studied. Technical solutions will be investigated for texture and force feedback. The criteria will be haptic quality, usability and stability. The tasks include the development and/or application of position, force and motion sensors, e.g. capacitive stretch sensors, and other sensors monitoring heart rate, finger temperature, or skin conductance, will also be applied. The haptic system has to be integrated within a body suit and the data has to be interfaced with a processing unit. You will take part in the conception, integration and test of the system and publicise the scientific work in journals and on international conferences. The work will be done within the CeTI research room "Sensors and Actuators" (TP2). There is the possibility to co-ordinate the work within this research room.

Requirements: We are looking for a candidate with a very good to excellent university degree or doctorate in electrical/mechanical/mechatronic engineering, physics, mathematics or computer science with respect to aforementioned technologies. Knowledge of haptic perception and standard psychophysical techniques is an advantage. Team spirit and collaboration will be essential for the project.

CeTI-position_Altinsoy_2 – 1 Research associate / PhD student / Postdoc for 3D-audio-reproduction and integrative multimodal interface solutions for augmented human-CPS interaction

Topic: Design and development of 3D-audio and multimodal reproduction technologies (Research room K3)

Tasks: Your task will be the development and application of various 3D-audio reproduction and multimodal interface technologies. Different loudspeaker based reproduction approaches, e.g. ambisonics, wave field synthesis, surround, binaural, etc., will be studied. The tasks include the development of a loudspeaker array and its control for sound reproduction and projection. The audio system has to be integrated within a multimodal interface, which includes various haptic feedback systems and smart glasses. You will take part in the conception, integration and test of the system and publicise the scientific work in journals and on international conferences. The work will be done within the CeTI research room "Augmented perception and interaction". There is the possibility to co-ordinate the work within this research room and the research room "Sensors and Actuators" (TP2).

Requirements: We are looking for a candidate with a very good to excellent university degree or doctorate in engineering sciences, physics or mathematics, scientific work on an acoustic topic; excellent knowledge and experience in the field of acoustics, experience with acoustic measurements and analysis. Knowledge of auditory perception, multimodal interaction and standard psychophysical techniques is an advantage. Team spirit and collaboration will be essential for the project.

CeTI-position_Ellinger_2 – 2 Research associates / PhD students for mm-wave transceiver

Topic: Design of wireless millimetre-wave transceiver chip for tactile on-body communications (Research room TP4)

Tasks: Your task will be the development of a fully integrated ultra-compact wireless transceiver chip for real-time on-body communications to transmit sensor and actuator data for the tactile

internet with Human-in-the-Loop. High operation frequencies of around 100 GHz are used to allow the integration of the antenna on the chip thereby enabling ultra-compact dimensions. Leading-edge CMOS or BiCMOS technologies are used. To massively reduce the power consumption, the adaptive transceiver features aggressive duty-cycling with ultra-fast settling times in the nanosecond region. Chip thinning is considered to allow chip bendability. The major tasks are the simulation, layout and measurements of the chips and PCBs. Moreover, you will contribute for the system conception, integration and test, and will publish the scientific work in journals or on international conferences. The work will be done within the CeTI research room "Flexible electronics" (TP4).

Requirements: We are looking for two candidates with a very good university degree in electrical engineering, communications technology or information technology with knowledge in circuit design. Experiences in high frequency chip design would be helpful.

CeTI-position_Fettweis_1 – 1 Research associate / PhD student / Postdoc for
communication, coding, and compression

Topic: Co-design of wireless communications physical layer and control loops in networking with humans-in-the-loop (Research room TP3)

Tasks: Your task is to design a PHY/MAC layer for control loop applications, taking control performance as well as a lossy wireless connection into account. In CeTI use-cases, logic of traditionally local control loops will be placed in the cloud. This brings challenges in the backend networking. Thus, the solutions need to adapt to changes in PHY/MAC states at the networking side, and vice-versa, while also taking the control-loop performance requirements into account. The associated tasks include designing and developing algorithms to optimise PHY/MAC parameters to meet the quality of service requirements of CeTI control-loop applications, implementing and testing the proposed algorithms on real-time systems. The research results shall be published at international conferences and renowned journals.

Requirements: We are looking for a candidate with excellent university degree in electrical engineering, information technology, profound knowledge in mathematics to analyse wireless communication systems as well as interest in control loop design, and solid experience in programming digital signal processing algorithms (Matlab, Python, C++). Working knowledge in mobile communication systems is an advantage. The candidate should have excellent analytical, organisational, and communication skills, including eagerness to co-operate effectively with team members and other researchers.

CeTI-position_Fitzek_1 – 1 Research associate / PhD student / Postdoc for
communication, coding, and compression

Topic: Low latency and resilient communication in meshed networks (Research room TP3)

Tasks: Your task is to develop and apply different coding and compression theories for the Tactile Internet. The solutions found need to be tailored for embedded systems developed in other CeTI research groups. Solutions such as network coding, compressed sensing, and functional compression need to be combined and applied to different networks topologies. Especially use cases around the body area network are of special interest in this case. Compression for tactile and haptic scenarios are developed together with CeTI research room K1.

Requirements: We are looking for one candidate with a very good university degree in electrical engineering or computer science with respect aforementioned theories. Team spirit and collaboration will be essential for the project.

CeTI-position_Fitzek_2 – 1 Research associate / PhD student / Postdoc for SDN/NFV/ICN

Topic: Softwarerised communication networks for the Tactile Internet (Research room K2)

Tasks: Your task is to develop solutions for software defined networks (SDN), network function virtualisation (NFV), and information centric networks (ICN) with respect to low latency, resilient, and secure communication for the Tactile Internet. Different network architectures and topologies spanning from body area networks, via local area networks, to wide area networks are considered. The solutions developed need to be tailored for the three use cases within CeTI, namely medicine, industry, and the Internet of Skills. Essential is the collaboration with and understanding of different research rooms within CeTI.

Requirements: We are looking for one candidate with a very good university degree in electrical engineering or computer science with respect to aforementioned technologies. Knowledge of programming is a prerequisite for a position within CeTI. Team spirit and collaboration will be essential for the project.

CeTI-position_Jorswieck_1 – 1 Research associate / PhD student for
communication, coding and compression

Topic: Design novel transceiver structures, including signal processing, coding and decoding, as well as resource allocation algorithms for low latency and high reliability communications enabling CeTI technologies (Research room TP3)

Tasks: TP3 develops novel communication schemes and resource allocation methods for CeTI scenarios. This includes methods from communications (transceiver design, channel coding, pre-coding) as well as resource allocation (scheduling, power allocation, matching, network slicing).

For high reliability novel concepts as multi-connectivity and massive diversity schemes are developed based on analysis of the underlying effective fading channel models. Therefore, tools from information theory and probability theory are necessary.

This position will contribute to the system design of the CeTI communication links and will integrate requirements from other research rooms within CeTI.

Requirements: We are looking for a candidate with a very good university degree in electrical engineering, computer science, or maths with respect to aforementioned techniques. Inter-disciplinary collaboration skills are required.

CeTI-position_Mayr_1 – 1 Research associate / PhD student / Postdoc for
system design and application body computing hub

Topic: System design for wearable computing systems (Research room TP4)

Tasks: Your task will be the system conception and design of an ultra-low-power system for wearable computing, called the body computing hub (BCH). After getting an in-depth knowledge about the compression, adaptation and closed-loop feedback techniques developed in the CeTI K-rooms, especially K2, K3 and K4, you will analyse the underlying algorithms in terms of system requirements (memory, processing capabilities). Based on this, your task is to choose algorithms and adapt them such that they fit into the tight constraints of the BCH. You will develop and investigate new compression and pruning techniques and their implementation in low-power hardware. Your analyses will form the basis for the conception and implementation of the BCH system architecture. As such, you will also co-ordinate the BCH chip design. You will also closely interact with researchers in CeTI rooms K2, K3 and K4, giving them feedback on hardware constraints and optimisations for their algorithm development, acting as an intermediary between hardware and algorithms. You will publish your scientific work in journals and present it on international conferences. The work will be done within the CeTI research room “Flexible electronics” (TP4).

Requirements: We are looking for a candidate with a very good to excellent university degree or doctorate in electrical engineering, communications technology or information technology with a

deep knowledge in circuit design as well as system design for machine learning applications. Experiences in deep learning or compressed sensing are welcome.

B) Faculty of Computer Science

CeTI-position_Baier_1 – 1 Research associate / PhD student / Postdoc for formal explanation techniques

Topic: Stochastic model-based explanation and causality (Research room TP5)

Tasks: The position will be responsible for the development of the model-based explanation framework in research room TP5. This framework will rely on stochastic operational models that cover the main functionalities of the system components and interfaces to their contexts. Within these models, the aim is to develop new methods for Bayesian reasoning and probabilistic abduction to determine causal dependencies of temporal events. In combination with monitoring techniques, this will provide the foundations to derive most likely explanations for observed scenarios as well as to predict future behaviours. In collaboration with research room K4, the results will be used to generate human-understandable feedback techniques.

Requirements: We are looking for a candidate with a very good to excellent university degree or doctorate in computer science, mathematics, or related fields with a deep knowledge in stochastic operational models and their analysis. The candidate should be able to work collaborative, independent, and proactive.

CeTI-position_Dachselt_1 – 1 Research associate / PhD student / Postdoc for ubiquitous multimodal interaction

Topic: Designing and evaluating smart adaptive interaction and multimodal feedback / feedforward strategies with wearables in ubiquitous settings (Research rooms TP2 and K4)

Tasks: Your task in TP2 is to design adaptive multimodal interaction approaches for mixed reality and human-robot interaction. Humans should be supported in interacting with future cyber-physical settings using rich on-body input and output channels. In iterative development cycles, you will conceive novel ways of multimodal interaction and control (by means of gestures, gaze, touch, speech etc.). Depending on your experience, this includes utilising Augmented Reality technologies and/or building novel wearable input/output solutions using latest manufacturing methods. Another aspect will be to design, blend, and evaluate feedback modalities and adaptive visualisations to optimally support human co-habitation in a cyber-physical world. Collaborating with K4 (Human-machine co-adaptation), this includes investigation of feedforward techniques to visualise consequences of human and machine actions and to support their interpretability.

Requirements: The candidate has a very good university degree in computer science, media informatics, visual computing or related fields, with experiences in human-computer interaction, information visualisation and evaluation methods. Good command of the English language, team spirit, an open mind and commitment are essential for working in this interdisciplinary project.

CeTI-position_Fetzer_1 – 1 Research associate / PhD student for a safe, secure, and scalable computing infrastructure that enables intuitive tactile interaction (Research rooms K2 and TP5)

Tasks: Designing, building and evaluating a low latency, energy-efficient and secure platform that can be used to build trusted SDN, NFV and ICN. Moreover, this platform can be used to build trusted deep learning as well as trusted classifiers. The platform can be ported both on high-end as well as low-end, energy-efficient processors.

Requirements: The candidate has a university degree in computer science, or related fields, with initial experience in systems research and good development skills. Very good command of the English language; be flexible, proactive, independent, and a team-player.

CeTI-position_Gumhold_1 – 1 Research associate / PhD student for 3D scanning / 3D rendering

Topic: Develop 3D acquisition pipeline for fast and distributed capturing of virtual world model and support of real-time rendering for augmented reality technologies (Research room TP5)

Tasks: To enable multimodal interaction and co-working of humans and machines, the understanding of the geometric environment is essential. The environments in the use cases of CeTI are dynamic and need to be updated on the fly through newly developed acquisition techniques. Furthermore, fast communication of detailed 3D information to the user is an essential building block of CeTI use cases and provided through augmented reality glasses among other modalities.

The task for this position is twofold. On the one hand, the realisation of a fast 3D acquisition pipeline based on the portable 3D sensors developed in TP2 that can build and update a consistent 3D world model incrementally. On the other hand real-time rendering approaches will be developed that allow low latency rendering of detailed 3D information to the augmented reality classes developed in TP2. Close collaborations are planned with researchers from TP2 on multimodal interaction as well as with the chair of Machine Learning for Computer Vision on the extraction of semantic information from the acquired geometry data.

Requirements: The candidate has a university degree in computer science, maths, or related fields, with initial experience in 3D scanning and real-time rendering. Very good command of the English language; be flexible, proactive, independent, and a team-player.

CeTI-position_Strufe_1 – 1 Research associate / PhD student for sensing/collection of data

Topic: Building demonstrators and evaluating the effect of CeTI technologies to promote skill acquisition (Research rooms U3 and K2)

Tasks: U3 is building demonstrators and evaluates explores the effect of using CeTI technologies to promote skill acquisition. This implies sensing/collection of motor data, its transmission and processing, to initiate timely haptic feedback, which falls into the task of K2.

The collected and processed data is highly personal, as it may disclose personal habits and capabilities to the entities of data controllers and data processors.

This position will hence help to analyse the data collected and used in U3, to assess it for privacy implications as well as machine learning requirements from K4, and then survey and develop Markov-model-based behaviour prediction models with minimum privacy infliction.

Requirements: The candidate has a university degree in computer science, maths, or related fields, with initial experience in privacy and machine learning. Very good command of the English language; be flexible, proactive, independent, and a team-player.

C) Faculty of Psychology

CeTI-position_Kiebel_1 – 1 Research associate / Postdoc for computational neuroscience

Topic: Computational modelling of sequences of goal-directed actions and multisensory integration (Research rooms TP1 and K4)

Tasks: TP1 and K4 will develop computational models how humans integrate multisensory sensory input while performing sequences of goal-directed actions. In CeTI we will be using Bayesian inference techniques in combination with nonlinear dynamic systems to model the perception of observed human movements and the inference of intent. This position will be located in rooms

TP1 and K4, where we will use the developed models to experimentally test predictions about how humans use multisensory information during goal-reaching.

Requirements: The candidate has a university degree in computational neuroscience, physics, maths, robotics, computer science, or related fields, ideally with expertise in computational models of human behaviour. Additional expertise in EEG or eye tracking analysis, Bayesian inference, or multisensory integration is a plus.

CeTI-position_Li_1 – 1 Research associate / Postdoc for human multisensory perception

Topic: Psychophysical and neural mechanisms of goal-directed multisensory perception (Research room TP1)

Tasks: One of CeTI's research aims is to understand key psychophysical parameters and neural mechanisms of human multisensory perception and decision making that are sensitive to brain development, brain aging or individual differences in expertise. These parameters are crucial for designing sensors/actuators and closed-loop human-machine interactive models that are sensitive to the user's age and other user characteristics. This position will be located in TP1, where we will conduct multisensory perception (e.g., audio-tactile, visual-tactile, audio-visual-tactile) and decision making experiments with human participants of different ages, covering early childhood to old age, while assessing functional brain correlates of multisensory perception using electroencephalography (EEG) or near-infrared spectroscopy (NIRS).

Requirements: We are looking for a candidate with a PhD degree in cognitive neuroscience, psychology or related fields who has expertise in psychophysical research of sensory and perceptual processes and cognitive neuroscience methods. Interests and prior experiences in computational modelling or human-technology interactions would be a plus.

CeTI-position_Li_2 – 1 Research associate / PhD / Postdoc for augmented perception and action

Topic: Age and individual differences in perception and action in augmented and virtual reality (Research rooms TP1 and K3)

Tasks: One of CeTI's research aims is to augment human perception and action with new real-time sensor/actuator technologies. As the new technologies are targeted at a wide population, we need to investigate age and other user characteristics that may influence perception and action in augmented and virtual reality. This position is located in TP1 and K3, where we will conduct multisensory behavioural and neurocognitive experiments with human participants in augmented/virtual reality and in situations involving tele-operation.

Requirements: We are looking for a candidate with a university degree in human factor engineering, psychology or related fields who has expertise in human-machine systems, augmented /virtual reality and tele-operation. Interests and prior experiences in eye tracking and motion capture technologies as well as EEG analysis would be a plus.

CeTI-position_Narciss_1 – Chair of Psychology of Learning and Instruction

1 Research associate / Postdoc for skill acquisition and learning

Topic: Skill acquisition and learning with CeTI technologies (Research rooms TP1 and U3)

Tasks: One of CeTI's research aims is to augment human perception and action with new real-time sensor/actuator technologies in order to promote skill acquisition. U3 will build demonstrators aimed at promoting sensory-motor skill acquisition. Your tasks will be to conduct (a) multisensory behavioural experiments together with the TP1 team, (b) design-based research in U3 in order to investigate the benefits and constraints of using CeTI technologies for promoting sensory-motor skill acquisition.

Requirements: We are looking for a candidate with a PhD degree in psychology; human factor/medical engineering, or related fields who has expertise in psychophysical research of

technology-enhanced sensory-motor learning and control, as well as experiences in motion capture technologies. Interests and prior experiences in cognitive neuroscience methods and human technology interactions would be a plus. Team spirit and collaboration will be essential for the project.

CeTI-position_Pannasch_1 – 1 *Research associate / PostDoc for experimental research on Human–Cyber-Physical Systems interaction* (Research room K3)

Topic: Fundamental mechanisms governing interaction between humans and CPS

Tasks: K3 will integrate knowledge about human perception and attention with innovative sensor/ actuator and electronic technologies to develop new integrative multimodal interface solutions for augmented interactions between humans and cyber-physical systems. In a series of experiments, psychophysical and neurocognitive data will be collected to better understand needs, constraints, and challenges in human–CPS interactions. The work will mainly focus on the integration of multisensory data, i.e. visual, auditive and haptic information.

Requirements: The candidate has a university degree in psychology, with initial experience in collecting and analysis of psychophysical data, especially experience in eye tracking and motion capture. Very good command of the English language; be flexible, proactive, independent, and a team-player.