



Faculty Position in the Grado Department of Industrial and Systems Engineering Virginia Tech – Assistant/Associate/Full Professor, Industrial Analytics

The Grado Department of Industrial and Systems Engineering at Virginia Tech invites applications for a position at all tenure-track and tenured ranks (Assistant/Associate/Full Professor), effective August 2018. We seek outstanding candidates in the area of **Industrial Analytics**. This faculty position is part of a cluster in *Data and Decisions*, described as a Destination Area (<https://provost.vt.edu/destination-areas/da-overview/da-data.html>). Virginia Tech's *Data and Decisions* Destination Area (DD-DA) seeks to advance the human condition and society with better decisions through data. Faculty working together in this area are integrating data analytics and decision sciences across the transdisciplinary research and curriculum efforts at Virginia Tech and beyond. Successful candidates will be expected to engage in transdisciplinary research, curriculum development, and global outreach with other faculty working in the DD-DA. Candidates with demonstrated experience in interdisciplinary teaching or research that aligns with the *Data and Decisions* vision are particularly encouraged to apply.

The candidate is expected to be a leading researcher in the area of **industrial analytics** to achieve innovations in improving productivity, quality, efficiency, resiliency, and security of smart and connected industrial systems. Areas of expertise may include (but are not limited to) data management, communication, computation, control, or cyber security to optimize industrial operations throughout the entire product life cycle, driven by the rapid progress of Internet of Things (IoT) technology and the cyber-physical infrastructure of industrial systems. Applications in advanced manufacturing are preferred. The specific areas of interest within industrial analytics may include, but are not limited to:

- **Smart industrial systems design and optimization:** This research focuses on IoT-enabled customer-driven industrial system design and optimization. IoT technology creates new ways of gaining insights into how customers are using products and/or services, what customers want, how well the products and/or services serve customers, and how the products provide reliable

and responsive functionality. This area of research studies the IoT-based systematic framework in industrial system design by taking product usage and performance measures into consideration.

- **Autonomous and resilient system operations:** This area focuses on optimal operational decision-making, such as monitoring, prediction, engineering control, real-time scheduling, resource allocation, inventory control, process automation, and human-machine collaboration to achieve autonomy, resiliency, and optimization in industrial systems. This area of research should enable information sharing across different functional units and develop online/real-time computational algorithms to automatically achieve optimal decision-making for the operations of industrial systems.
- **Cyber security for industrial systems:** This research area focuses on the urgent needs in cyber-security of industrial systems and provides a data-driven cyber-attack detection and dynamic decision-making framework to protect industrial systems and networks. This research may consist of, but is not limited to, machine learning, computer security, anomaly detection, end-point protection of programmable logic controllers, and privacy issues.

The ISE Department is comprised of 30 full-time faculty with approximately 550 undergraduate students, 170 master's students, and 90 doctoral students. The undergraduate and graduate ISE programs are currently ranked eighth and sixth, respectively, by U.S. News & World Report. Additional information about the department can be found at www.ise.vt.edu.

Candidates are expected to lead innovative and high-quality research, build a strong sponsored-research program, develop and teach graduate and undergraduate courses, and advise and mentor graduate and undergraduate students. The position requires a Ph.D. in industrial and systems engineering, operations research, or a closely related field. Preferred qualifications include demonstrated experience with interdisciplinary teaching or research in areas that



align with Virginia Tech's university-wide, multidisciplinary focus on *Data and Decisions*.

Applications will be accepted online at <https://listings.jobs.vt.edu/postings/80309>. Candidates should submit a cover letter, current CV, research statement, teaching statement, a diversity statement describing the applicant's interest or experience in working with diverse groups and underrepresented populations, three relevant research publications, and the names of at least three references. Review of applications will begin immediately, and the deadline for ensuring full consideration is December 31, 2017. The position will remain open, and applications may be considered until the position is filled. For more information or for any questions about the search, please contact the Search Committee at (ise-search@vt.edu).

Virginia Tech is committed to a culturally and ethnically diverse campus environment and to principles that promote inclusive practices. Virginia Tech does not discriminate against employees, students, or applicants on the basis of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, or veteran status. Virginia Tech is the recipient of a National Science Foundation ADVANCE Institutional Transformation Award to increase the participation of women in academic science and engineering careers. The ISE Department strongly supports the Virginia Tech Principles of Community.

