Chapter 2

ABOUT THE DEPARTMENT

Department of Computer Science

The Department of Computer Science at Old Dominion University is seeking multiple full-time tenure-track faculty members with expertise in interdisciplinary areas of big data, machine learning and high performance scientific computing, cybersecurity, and medical image computing.

Projects they are currently working on

- Image Analysis in Medical and Bio-Material Modeling and Simulation.

    Medical image computing is of growing importance in medical diagnostics and image-guided therapy. Nowadays, image analysis systems integrating advanced image computing methods are used in practice e.g. to extract quantitative image parameters or to support the surgeon during a navigated intervention. However, the grade of automation, accuracy, reproducibility and robustness of medical image computing methods has to be increased to meet the requirements in clinical routine.

- Parallel Computational Geometry with focus on quality mesh generation, High-Performance Scientific Computing.
- Data Science

    Data science is a multidisciplinary blend of data inference, algorithm development, and technology in order to solve analytically complex problems. At the core is data. Troves of raw information, streaming in and stored in enterprise data warehouses. Much to learn by mining it. Advanced capabilities we can build with it. Data science is ultimately about using this data in creative ways to generate business value:

- Neuro-Information Retrieval, Eye Tracking, Human-Computer Interaction, Machine Learning, Digital Libraries.
- Cybersecurity

    Cybersecurity is the practice of protecting systems, networks, and programs from digital attacks. These cyberattacks are usually aimed at accessing, changing, or destroying sensitive information; extorting money from users; or interrupting normal business processes.

- Implementing effective cybersecurity measures is particularly challenging today because there are more devices than people, and attackers are becoming more innovative.

- Data Mining, Privacy-Preserving Mining, Distributed Systems, Performance Analysis. Computational Biology/ Bioinformatics, Computational Science, Monte Carlo Methods, High Performance Computing, Big Data Analysis. Web Science, Digital Preservation, Information Visualization, Wireless Networks.

- Aggression detection and intervention techniques in Alzheimers. Professor Ajay Gupta has been working for this project since so many years. The data collected has been immense and the progress has been substantial in this research topic. Detecting aggression in Alzheimers in one of their main concerns.

PRA

Our business was created in 1996 as a U.S. consumer debt-buying and collections company. Over time and by design, PRA Group has expanded and diversified throughout its 20-year history. PRA returns capital to banks and other creditors to help expand financial services for consumers in the Americas and Europe and provides a broad range of additional revenue and recovery services to business clients.

The core area of the work includes

- Core Acquisitions

  Acquisition and servicing of nonperforming loans from major credit grantors and other consumer dept owners in the United States and Canada.

- Involving Investment Services

  Acquisition & servicing of secured and unsecured insolvent customer accounts from leading banking institutions, retail banks, and other specialty finance providers in the US, Canada, Germany, and the UK.

- Claims Compensation Bureau

  Purchasing and filing of securities and antitrust class action claims on behalf of institutional investors and corporate clients in the United States and Europe.