

**Special Note: This is just information for global interns to look at our faculty members and their research areas. What this mean is that even though you want to work with a specific faculty member, we may not be able to match you with him/her!! Please keep that in mind.**

## **Undergraduate and/or Graduate Research Opportunities for international Students at the University of Nevada, Las Vegas**

### **Department of Computer Science**

#### **Dr. Mingon Kang**

- Maximum Number of Interns: 10 (but flexible)
- Projects: Bioinformatics, Deep Learning, Text/Data Mining, Computer Vision
- Areas of Expertise Interns Should Have: Programming languages skills are required. Strong background of mathematics, Statistics, and Computer Science are preferred.

### **Department of Electrical and Computer Engineering**

#### **Dr. Biswajit Das**

- Maximum Number of Interns: 2
- Projects: Sensors for autonomous vehicles
- Areas of Expertise Interns Should Have: Experience with circuits and ICs, microcontroller programming, and PCB design/fabrication.

#### **Dr. Brendan Morris**

- Maximum Number of Interns: 10 (likely would take less after screening)
  - Projects: Research areas include artificial intelligence/deep learning, intelligent transportation systems, self-driving cars, and computer vision. Sample projects include
    - 1) Sports quality assessment: deep learning for automated scoring of Olympic events
    - 2) Deep trajectory prediction: use of deep learning to predict trajectories (pedestrians, cars, bikes) 5 seconds into the future to supplement self-driving technology
    - 3) Baby Face Analysis: computer vision to detect baby emotion, collaboration with Psychology
    - 4) Portable face recognition system: design of low power face recognition system using deep learning for portable application
    - 5) Self-driving car design: build and test hardware and software for self-driving vehicle.
- Areas of expertise interns should have: Minimum requirement is strong programming skills. Beneficial to have image processing/computer vision background, exposure to machine learning and deep learning, and self-driving car technology (sensors, hardware, software).

#### **Dr. Venkatesan Muthukumar**

- Maximum Number of Interns: 8
- Projects: 1) Robotics (SLAM) 2) Unmanned Aerial Vehicles (UAVs) (acoustics and video processing) 3) Image Processing using Depth and 3D Sensors and Hyperspectral cameras 4) FPGA design for Deep Learning 5) Embedded Systems (specifically control) 6) Wireless Sensor Networks.

- Areas of Expertise Interns Should Have: C/C++ Programming, Python, Matlab, Embedded Systems (ARM or any 32-bit processor), Verilog/VHDL (FPGA design), Robotic Operating Systems (ROS), Linux.

**Dr. Henry Selvaraj and Dr. Grzegorz Chmaj**

- Maximum Number of Interns: 1
- Projects: IoT projects, FPGA/VHDL projects, and digital logic
- Areas of Expertise Interns Should Have: computer engineering in general, ideally having some knowledge about logic design, programming, embedded systems.

**Department of Mechanical Engineering**

**Dr. Paul Oh**

- Maximum Number of Interns: 3
- Projects: The projects are in the area of robotics and automation design, research and development, and testing
- Areas of Expertise Interns Should Have: fabrication (e.g. basic machining, 3D printing, CNC) skills, Matlab, CAD (e.g. Solidworks, Pro/E, AutoCad) and programming – all highly recommended, but not a pre-requisite.

**Dr. Mohamed Trabia**

- Maximum Number of Interns: 4
- Projects: 1) Developing a predictive model for diabetic ulcers 2) Biomechanics of walking under reduced gravity 3) Shock transmission in bolted joints 4) Design of demand-activated rumble strips
- Areas of Expertise Interns Should Have: Developing a predictive model for diabetic ulcers; Biomechanics of walking under reduced gravity (Signal processing; Programming, preferably in Matlab; Computer vision; System Identification; and Basic understanding of biomechanics and dynamics); Shock transmission in bolted joints (Finite Element, preferably in LS-Dyna; Signal processing; Expertise with accelerometers); and Design of demand-activated rumble strips (Signal processing; Expertise with accelerometers; and Data analysis)

**Dr. Yi-Tung Chen**

- Maximum Number of Interns: 2
- Projects: 1) Heat exchanger design. Knowledge of using ANSYS and Fluent commercial software is highly desirable
- Areas of Expertise Interns Should Have: Fluid mechanics and heat transfer

**Dr. Hui Zhao**

- Maximum Number of Interns: 2
- Projects: 1) Biosensing 2) Nanotechnology 3) Photovoltaics 4) Biomaterials
- Areas of Expertise Interns Should Have: the knowledge of mechanical engineering, chemical engineering, and electrical engineering

**Dr. Woosoon Yim**

- Maximum Number of Interns: 2

- Projects: The projects are in the area of autonomous sensing and navigation of small scale robotic flying platforms for source localization and contour mapping.
- Areas of Expertise Interns Should Have: Some knowledge of dynamics/control and programming skills are required. Automatic control, kinematics and dynamics, algorithm development and machine intelligence. Programming skills are required.

### **Department of Civil and Environment Engineering**

#### **Dr. Jee Woong Park**

- Maximum Number of Interns: 3
- Projects: 1) Tactile-based communication system for quick signaling to human subjects. 2) Human detection and density estimation by Bluetooth-low energy technology.
- Areas of Expertise Interns Should Have: Programming skill is preferred. Student without programming skills can assist system testing and other relevant activities.

#### **Dr. David James**

- Maximum Number of Interns: 2
- Projects: The project is in the area of lake water quality measurements and data archiving, analysis, work up. Field work required for summer 2019
- Areas of Expertise Interns Should Have: The interns should be able to drive vehicles in the US. Expertise in time series analysis, statistics and familiarity with environmental measurements and measurement uncertainty required.

#### **Dr. Eakalak Khan**

- Maximum Number of Interns: 2
- Projects: 1) Biodegradability and bioavailability of contaminants in Water 2) Removal of contaminants from water and wastewater
- Areas of Expertise Interns Should Have: Wet chemistry laboratory skills including safe handling of chemicals.

#### **Dr. Jacimaria Batista**

- Maximum Number of Interns: 1
- Projects: Environmental engineering research 1) Biological phosphate removal 2) Biological chromate reduction 3) Perchlorate reduction by bacteria.
- Areas of Expertise Interns Should Have: Wet chemistry laboratory skills including safe handling of chemicals; Junior or Senior Student

#### **Dr. Erica Marti**

- Maximum number of Interns: 2
- Projects: 1) Collection and analysis of water samples to determine potential for formation of disinfection byproducts, and 2) investigating multiple strategies to reduce trihalomethanes (THMs) in water reservoir tanks. Some projects may involve working with wastewater or untreated surface waters.
- Areas of Expertise Interns Should Have: Environmental engineering, environmental chemistry, or analytical chemistry background. Students must have prior wet lab experience (e.g. chemical handling, pipetting, glassware handling, making solutions). Prior experience with mass spectrometry instruments is preferred but not required.

**Dr. Jin Ouk Choi**

- Maximum Number of Interns: 3 (in a condition that interns will have their own space/desk for work)
- Projects: 1) Construction Industry Institute's Modular Construction/Standardization 2) National Science Foundation's Construction Workforce 3) University Transportation Center's Planning/managing High-Speed Rail project
- Areas of Expertise Interns Should Have: 1) Basic Knowledge in Construction/Civil Engineering 2) Research interests in Construction Engineering and Project Management 3) English Proficiency

**Dr. Ying Tian**

- Maximum Number of Interns: 3 (but I cannot provide any office space)
- Projects: the experimental component of my ongoing NSF project: Behavior of reinforced concrete structures near collapse.
- Areas of Expertise Interns Should Have: Must have taken the courses of concrete material and reinforced concrete structures

**Dr. Sajjad Ahmad**

- Maximum Number of Interns: 3-4
- Projects: Storm water management; climate change; urban hydrology; groundwater change estimation using satellite remote sensing
- Areas of Expertise Interns Should Have: some Matlab programming skills, course work in hydrology, water resources engineering, and GIS will be helpful but not required.

**Dr. Mojdeh Asadollahipajouh**

- Maximum Number of Interns: 2
- Projects: 1) Numerical modeling application in general civil/geotech projects (basic softwares: plaxis, geostudio, rocscience, and advanced ones: ls-dyna) that requires familiarity with finite element modeling
- 2) Conducting non-destructive geophysics tests that requires matlab skills for processing data, knowledge in geotechnical engineering, familiar with soil tests (laboratory and in-situ tests), geophysics, and soil dynamics
- Areas of Expertise Interns Should Have: N/A

**Entertainment Engineering and Design****Dr. Si Jung Kim**

- Maximum Number of Interns: 6 (2 teams with 3)
- Projects: 1) Augmented and Virtual Reality (AVR); 2) Robotics
- Areas of expertise interns should have: Programming experience with any computer languages and/or Experience with electronic circuits; Microsoft office programs;

**College of Engineering Dean's Office****Ms. Marian Mason**

- Maximum Number of Interns: 1-2
- Projects: 1. Updating the digital job board with internship and job postings 2. Creating and sending marketing materials for events the department hosts 3. Updating and keeping records of employers using Google Sheets 4. Contacting employers to discuss openings and receive placement information 5. Creating handouts for employers and students about the program
- Areas of expertise interns should have:
  1. Organizational, planning and management skills;
  2. Strong communication skills;
  3. Graphic arts skills a plus;
  4. Good with Google Sheets; able to produce graphs and charts;
  5. Dependable and detail- oriented

**Ms. Kari Locke, Systems Administrator**

- Maximum Number of Interns: 2
- Projects: 1. Support the College of Engineering System Administrator in day to day tasks; 2. Engineering software installs; 3. System builds and rebuilds; 4. Website maintenance; 5. College networking and servers support; 6. Help desk support for graduate students, and faculty and staff
- Areas of expertise interns should have:

No specific requirements - any CS/EE/CE Engineering Students can work for Ms. Locke's team.