UNLV | Howard R. Hughes College of ENGINEERING

Educate, Engage, Inspire, Innovate

Overview

The objective of the UNLV Engineering Research Internship Program is to immerse international undergraduate students into the United States academic experience and provide them with research projects and/or work as an intern in research centers or organization at UNLV. The program is designed for motivated international students who are interested in research projects and/or advanced coursework. The UNLV Engineering Research Internship Program will help participating students become better adapted at becoming productive within the global workplace or to pursue graduate studies.

a. Duration: August to December 2022 (One Semester), January to May 2022 (One Semester), or August 2022 to May 2023 (Two Semester)
b. Target Students for each program: Freshmen to Senior level undergraduate students in any engineering or computer science major

Elements

- **Research Experience**
  The College of Engineering features many world-class laboratories led by well-known faculty in many fields including transportation, environmental engineering, robotics, smart materials, and computer security. More information is provided in the link https://www.unlv.edu/engineering/engineeringresearch. Please refer to the list of faculty who have supervised interns. The students need to indicate their interests in the application form and write a statement about their research preferences. The UNLV coordinating committee will place students in various labs depending on their interests and background as well as the availability for each lab position. Research Intern students work in the engineering labs and centers an average of 32 hours or above per week. Depending on the nature of their assignments, they may co-author the resulting technical publications.
- **Research Seminars**
  During every semester, one or a multiple of research seminars will be offered to introduce students to research methodology, research infrastructure, ongoing research projects within the College of Engineering, and career possibilities including industry and graduate studies.
- **Social Activities**
  Several social activities such as pizza/ice cream parties, movie night, racquetball competitions, and so forth. will be organized to allow participating students to interact with other UNLV College of Engineering students and UNLV students.
- **Field Trips (Additional fees required)**
  Field trips to relevant sites, such as 3 Day Canyon Trip, Hoover Dam, strip resorts, solar power plants, and local industries will be scheduled to introduce students to local at-tractions within and around Las Vegas.

Program Fees (including the below items)

- Engineering Internship and Study Program Tuition: $3,500 per semester (including non-credit or credit bearing tuition and fees, special workshop courses, and administrative fees)
- Room and Board (estimated): $1,400 per month ($1,200 per month – Room/$200 per month – Board: Dining Dollar)

Application Deadline & Materials

- Application nomination deadline: April. 1, 2022
- All the Documents submitted to EIP: April 30, 2022
- Pre-Application Materials – Before research intern students are matched with a UNLV's faculty member(s)
  - Copy of Official college transcript
  - English Statement of Purpose (please indicate the specific research topic and areas that he/she has worked and been interested in)
  - English Resume
- Application Materials – After research intern students are matched with a UNLV's faculty member(s)
  - Once they are matched with a UNLV engineering faculty member, the detailed application process will be announced to them via email.

Possible Research Internship Opportunities for International Students at UNLV

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.

Dr. Beiyu Lin

- Maximum Number of Interns: 10 (but flexible)
- Projects: Behavior Modeling, Sensor Data, Imitation Learning, Applications to Healthcare, traffic, etc.
- 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.

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 Security and Machine Learning 6)Wireless and Wearable 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. Mohamed Trabia
- Maximum Number of Interns: 4
- Projects: 1) Developing a predictive model for diabetic ulcers 2) Biomechanics of plantar tissues 3) Biomechanics of colorectal tissues 4) Mechanical haracterization of ploymers
- Areas of Expertise Interns Should Have:
Signal processing; Programming, preferably in Matlab; Computer vision; and Basic understanding of biomechanics and dynamics; Finite Element, preferably in ANSYS; Data analysis; Machine Learning

Dr. Paul Oh
- Number of interns: 3
- Projects: 1)Design and fabricate robotic limbs (arms and grippers) for rotorcraft drones and apply for aerial manipulation tasks 2)Design of experiments and algorithms for disaster cleanup tasks and apply with on a full-scale humanoid robot 3) Design of path planning algorithms to navigate robots in home settings and apply on robots for home automation tasks
- Areas of expertise interns should have: Computer programming (C/C++ preferred, Matlab possible), computer vision, kinematics, embedded electronics, CAD

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

Department of Civil and Environment Engineering

Dr. Jeehee Lee
- Maximum Number of Interns: 5 (but flexible)
- Projects: Data-driven Construction Management, Natural Language Processing (NLP) in Construction Management, SMART Construction
- Preferred interns will have research expertise in at least one of the following areas: construction/project management; building science; sustainable construction; architectural engineering; civil engineering. Programming language skills (e.g., Python, R, etc.) are preferred.

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. 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. 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;

Contacts

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