SHAWN RAY

Research Engineer

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EDUCATION

2022 – 2023 **Masters Degree** — **University of Nevada Reno**

Received the Masters Degree of Computer Science and Engineering at the University of Nevada Reno. Joined the department of *Intelligent & autonomous systems* at the University of Nevada Reno. With emphasis on machine learning and virtual reality.

2018 – 2021 **Bachelors Degree** — **University of Nevada Reno**

Received the Bachelors Degree of Computer Science and Engineering at the University of Nevada Reno. Having worked with professors on projects and assisted grading and teaching. The University of Nevada, Reno taught a wide array of skill-sets.

2015 – 2018 **Associates Degree** — **Truckee Meadows Community College**

Received the Associates Degree of Science with an Emphasis on Computer Science from Truckee Meadows Community College; while maintaining a full time position in the Tutoring and Learning Center.

EXPERIENCE

2022 – 2023 Contract **Lecturer of Record** — **University of Nevada, Reno**

Prepared course material, supervised a team of teaching assistants, graded assignments, teaching, and conducted lab sections, aided students in their success towards their academic career. This was done in the topics of micro-controllers, embedded systems and signal transmission.

`Hardware / Micro-controllers / Electronics`

2022 – 2023 part time **Graduate Teaching Assistant** — **University of Nevada, Reno**

Assisted professors in forming class material, grading, teaching, proctoring, and offering guidance for the students. This is done for the classes on Embedded systems and data organization. Conducted a laboratory section for the embedded systems course, guiding students in construction of circuits and embedded systems.

`Hardware / Linux / Networking`

2017 – 2023 part time **Information Technology Support Specialist** — **Immigrant Software Corp.**

Managed computer systems, networks, servers and external devices for the company. Performed maintenance and troubleshooting of systems in place.

`Hardware / Linux / Networking`

2018 – 2020 part time **Computer Science Grader** — **University of Nevada, Reno**

Worked as a grader for the courses on Data Organization as well as Embedded Systems. Substitute teaching of the courses when needed. Conducted recitation sessions to aid the students in learning the topics as discussed in class.

`ANSI C / Assembly / Linux`

2019 — 2019 part time **Math and Science Lead Tutor** — **Truckee Meadows Community College**

Performed lead roles pertaining to the tutoring center at the Truckee Meadows Community College. Of which involved managing the other tutors, maintaining schedules as well as leading a project to make tutorial videos to educate students.

`Management / Mathematics / Physics / Computer Science`

2016 — 2019 full time **Math and Science Tutor** — **Truckee Meadows Community College**

Tutored students in the fields of Mathematics, Computer Science and Physics, done in the center as well as being embedded in lab sessions.

`Mathematics / Physics / Computer Science`

RESEARCH INTERESTS

Machine Learning
Machine Learning pertaining to data acquisition, manipulation and interpretation .

Deep Learning
Image classification for disease diagnostics. Medical implementations to aid in patient therapy and medical classifications.

Computational Oncology
The study and treatment of cancerous diseases using computational sciences. Incorporating all methods of machine learning and mathematics to aid in patient diagnosis and care.

Precision Healthcare
The topic of tailoring a specific treatment plan of a patient based on factors like genetics, environment and lifestyle. The approaches of Precision Healthcare are algorithmic by nature.

RELEVANT CLASSES

Machine Learning — **Cs491 - Topics in Machine Learning** — **Dr. Emily Hand Ph.D.**
Machine Learning studies representations and algorithms that allow machines to improve their performance on a task from experience. This is a broad overview of existing methods for ML. Emphasis is given to practical aspects of ML.

Deep Learning — **Cs491 - Topics in Deep Learning** — **Dr. Alireza Tavakkoli Ph.D.**
Principles, design and implementation of deep learning systems. Topics include statistical machine learning, multi-layer perceptron (MLP) and neural networks, deep neural networks, optimization and learning, convolutional neural networks (CNN), CNN architectures, CNN applications in classification, detection, segmentation, and advanced topics in recurrent networks and generative adversarial networks (GAN).

Bioinformatics — **Cs461 - Statistical Methods in Bioinformatics** — **Dr. Tin Nguyen Ph.D.**
Study and apply computational methods commonly used in biomedical research. Understand different types of biomedical data and appropriate computational and statistical approaches. Advanced topics in sequencing data analysis.

Image Processing — **Cs474 - Image Processing and Interpretation** — **Dr. George Bebis Ph.D.**
Image files, thresholding, histograms, convolution, edge detection, segmentation, frequency domain filtering, morphology, registration, combining images.

Design Patterns — **Cs330 - Design Patterns** — **Erin Keith**
Design Patterns deals with industry standards of coding and practices. A class taught in Java to illustrate the methods that a developer should apply in each situation.

Mass Detection — **Cs791 - Topics Mass Detection in Mammograms** — **Dr. Alireza Tavakkoli Ph.D.& Dr. George Bebis Ph.D.**
A research based class in which the students formulate a research project on the topics of mammopgraphy.

Mass Detection — **Cs791-2 - Topics Mass Detection in Mammograms Part 2** — **Dr. Alireza Tavakkoli Ph.D.& Dr. George Bebis Ph.D.**
A continuation of Cs791, in which students may either continue their research project or work on another one.

Testing — **Cs691 - Topics in Testing and Dev Ops** — **Erin Keith**
The class focuses on industry standards for testing software and the operations to which development should take place.

Databases — **IS675 - Database Design and Implementation** — **Dr. Dana Edberg Ph.D.**
The class deals with industry standards of databases, their implementation and the proper methodology to design them.

Bio-statistics — **ANTH706 - Seminar Anthropological Problems** — **Dr. Kyra Stull Ph.D.**
A course teaching bio-statistics using the R Language. Starting with an introduction to programming using the R language, statistical methods, and then to topics of supervised and unsupervised learning, data loading and processing.

Virtual Reality — **Cs792M - Virtual Reality** — **Dr. Eelke Folmer Ph.D.**
A course on virtual reality will teach students about sensor, display, and computing technology as well as human perceptual and motor processes that underlie the technology of virtual reality.

RESEARCH PROJECTS

Virtual Reality — **Discrete Locomotion**
Worked on a research project during studying the effect of locomotion techniques in virtual reality first-person shooter games. Making comparisons between continuous locomotion and discrete locomotion to see which method is not only preferred by the player but also easier to perform.

Mammography Classification — **Cross-view Attention**
Worked on a project recreating and extending the research done in cross-view mammography. Cross-view mammography is the topic of using all four views in a mammography examination. Using Attention in deep learning between the four views to generate attention maps for the channel and the spatial dimension. These attention maps aid in the final classification.

Cancer Detection — **Breast Cancer Classification**
Using the methods of deep learning, implemented a deep neural network working off of VGGnet to classify breast tissue images taken from CT scans as either cancerous or non-cancerous

Capstone — **Cancer Classification Using Deep Neural Networks**
The capstone for the Computer science program involved an extension of previous projects. Designed a user friendly interface for medical professionals to assist in cancer diagnosis. This project centralized around the deep neural network that is a modified AlexNet to work with DICOM images. The implementation of this network was done in JavaScript for a user friendly web based platform. Managed a team of students, distributed workflows, conducted weekly meetings.

SKILLS AND TECHNOLOGIES

Tensorflow, Keras, PyTorch, Scikit-learn, Numpy, Pandas, OpenCV, C++, ANSI C, C#, Java, HTML, CSS, LaTeX, Python, JavaScript, Assembly, R, Lisp, SQL, Unity

LANGUAGES

English - native

HOBBIES

Enjoys: gardening, reading books, playing video games, watching TV, making interesting projects involving electronics, repairing and collecting old technology, old cars, and even enjoys exploring and crystal hunting. Also is training to be a circus performer as a hobby and specializes in Aerial fabrics..

NON PROFIT

Volunteered for the Juneteeth celebration event in Reno Nevada in 2018 as well as past volunteering in Earth day celebrations. Volunteered his time to the Cybersecurity club at the University of Nevada, Reno as an officer of the club.