Contact

www.linkedin.com/in/samantha-w-chan (LinkedIn)

Top Skills

Java
Machine Learning
Python (Programming Language)

Languages

English (Native or Bilingual)
Cantonese (Native or Bilingual)
Mandarin (Full Professional)

Publications

Rotating Live Mammalian Cells Free in Media using Spatial Light Modulator (SLM)-Generated Optical Tweezers

Noninvasive Ultrasonic Glucose Sensing with Large Pigs (approximately 200 Pounds) Using a Lightweight Cymbal Transducer Array and Biosensors

Samantha Chan

Data Scientist at Cogility Software
Irvine, California

Summary

Highly driven and independent engineer with 4 years of experience in engineering R&D and data analysis, looking to transition into Machine Learning and Data Science. Achievements include leading machine learning initiative in surgical simulation, and created skills classification and gesture recognition tools for surgical education program. Also a recent graduate of the Udacity Machine Learning Engineer Nanodegree program. Seeking new Machine Learning and Data Science opportunities within Orange County.

Experience

Cogility Software
Data Scientist
July 2019 - Present (9 months)
Irvine, CA

Applied Medical
Engineer II
April 2015 - July 2019 (4 years 4 months)
Rancho Santa Margarita, CA

Oversees and manages all data processing and analytics projects within the Simulation Team. Projects range from sensor calibration and sensor data manipulation from microprocessors, to machine learning projects such as skills classification and gesture recognition. Often work with cross functional teams to design experiments and user requirements.

• Extracted orientation from Inertial Measurement Units (IMU) using sensor fusion algorithms.
• Implemented live gesture recognition and skills classification with live data feed from sensorized laparoscopic instruments.
• Built software tools for data preprocessing e.g. data segmentation application, skills classification application, automated force calibration.
• Collaborate with other software engineers to create software suite for surgical simulation.

• Lead and supervised small team of data scientists through analytics projects.
• Designed and built an automated pneumatic actuation and linear actuation system to calibrate strain gauges using load cells.
• Designed automated system to calibrate IMU devices using servo motors and microcontrollers.
• Designed, troubleshot, tested, and validated fixtures to assist in manufacturing, assembly and testing of surgical simulation tools and equipment.
• Documented manufacturing instructions, test protocols, and non-conformance investigation reports.

Arizona State University - The Biodesign Institute (CBDA)
Graduate Research Associate
June 2011 - August 2013 (2 years 3 months)
Tempe, AZ

Designed and implemented method to enable live computed tomography (CT) for single mammalian cells.

• Built LabVIEW application that controls phase of light reflected from a Spatial Light Modulator (SLM) into the objective lens, which transforms the light into the desired dynamic holographic optical tweezers that interact with cells and cause them to rotate.

Penn State University - Center for Neural Engineering (Dr. Bruce Gluckman)
Research Assistant
May 2010 - December 2010 (8 months)
University Park, PA

• Assisted in classification of hippocampal measurements of wakefulness and sleep stages of tetanus-infected rats with machine learning techniques.
• Improved accuracy of automatic classification program by determining misclassification rates to adjust data window size for training sets and actual data sets.
• Assisted in rat surgical procedures and brain perfusion for imaging sample collection.

Penn State University - Therapeutic Drug Delivery Research (Dr. Nadine Barrie Smith)
Research Assistant
June 2008 - March 2010 (1 year 10 months)
University Park, PA

• Built ultrasonic transducers from scratch using stamping, epoxy curing, soldering, and polyurethane molding.
• Designed and built vacuum operated degassifier to degas water in exposimetry tank to reduce signal artifacts.
• Validated ultrasonic drug delivery and blood glucose sensing devices through animal testing on swine model.

Gore
Summer Intern
May 2009 - August 2009 (4 months)
Elkton, MD

• Created, tested, and validated a simple and inexpensive method to measure heat retention of garments using a collection of heat flux sensors and a NI DAQ system.
• Produced CAD models & CFD analysis of GORE-TEX® products using ANSYS.

Education

Udacity
Machine Learning Engineer Nanodegree · (2018 - 2019)

Arizona State University
Master of Science (MSc), Bioengineering and Biomedical Engineering · (2011 - 2013)

Penn State University
Bachelor of Science (BS), Bioengineering and Biomedical Engineering · (2006 - 2010)

Penn State University
Bachelor of Science (BS), Mechanical Engineering · (2006 - 2010)