GREG LEE

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Ethically centered University of Utah graduate with an honors degree in biomedical engineering. Dedicated to leveraging deep learning to discover novel therapeutics which improve patient outcomes. Proven leadership skills in designing and promoting successful ventures. Experienced in both academic and industry workplaces. Excellent communication in cross-functional teams stressing translation of technical language.

EDUCATION

Honors Bachelor's of Science Biomedical Engineering, GPA: 3.9 2020
University of Utah, Salt Lake City, UT

- Bioinformatics emphasis
- Eccles Scholar
- *Cum Laude*

PROJECTS

Phragmites Invasive Plant Segmentation 2020

- A U-Net inspired CNN to label areas of invasive species growth from spectral images
- Constructed in TensorFlow, pandas and ArcGIS to create highly specific geographic mappings
- Test Set Pixel to Pixel Accuracy: 85%

OrgNet, Intestinal Organoid Recognition 2020

- **Y**ou **O**nly **L**ook **O**nce CNN implementation to detect and count organoids from confocal image
- Grew and imaged intestinal organoids from mice intestine stem cell progenitors
- Deep learning pipeline to process and train images on NVIDIA 2080ti GPU

Endotracheal Tube Cuff Sensor, Bench2Bedside Competition 2019-2020

- Designed a sensor capable of adjusting and recording time-series endotracheal cuff data
- Seamless cross-functional healthcare collaboration with FDA regulatory compliance and documentation

RESEARCH EXPERIENCE

Research Associate 2019 - present
Huntsman Cancer Institute, Salt Lake City, UT
Principle Investigator: Heidi Hanson

- Leading investigation on how compound exposures affect clinically relevant lung and bladder cancer subtypes
- Cleaned and analyzed data from the Utah Population Database and over 50 environmental databases
- Created Airflow pipeline to scrape and store hourly measurements of air pollution in Utah
- Implemented agile practices for increased efficiency in remote working environment

Research Assistant 2016 - 2019
Eccles Institute of Human Genetics, Salt Lake City, UT
Principle Investigator: Dean Li/Shannon Odelberg

- Post-doctoral Research Assistant: Elucidating the role of the gene ARF6 in acute myeloid leukemia
- *In-vitro* and *in-vivo* studies, working with knockout mice, organoids and cell culture
- Adapted mouse tracking software in Matlab to explore the role of ARF6 in autistic rodents.

Product Management: Data Science Intern 2018 - 2019
Recursion Pharmaceuticals, Salt Lake City, UT

- Processed, organized and harmonized over 50 pharmaceutical modeling databases
- Machine learning algorithm validation in pandas, numpy and scikit-learn
- Architect of user interface framework for predictive compound modeling

Researcher 2018

Huntsman Cancer Institute, Salt Lake City, UT
Principle Investigator: Trudy Oliver

- Lead Researcher: Understanding how metabolism drives an aggressive subtype of small cell lung cancer
- Lung organoid protocol optimization
- Reagent stocking and maintenance

LEADERSHIP

Founder and President 2018 - 2020
University of Utah Slow Food Chapter

- An inclusive gastronomic community focused in uniting students with healthy, sustainable and diverse foods
- Weekly meeting organization
- Event planning: Community meals, farm volunteering and cooking classes

Founder and President 2018 - 2020
Machine Learning Group

- A mentorship program which helps engineering students implement machine learning algorithms
- Bi-weekly teaching and assistance
- Formal code review

PUBLICATIONS & PRESENTATIONS

Lee G., Cody A., Johnson K., Zhao H., Odelberg S., Li D. and Zhu W. "Estrogen enhances female small intestine epithelial organoid regeneration". (2019). *Journal of Bio-X Research*. 2:1-7.

Zhao H., Johnson K., **Lee G.**, Pomicter A., Mueller A., Li D., Zhu W., Deininger M. and Odelberg S. "ARF6 maintains sphingolipid homeostasis and supports propagation of acute myeloid leukemia". Submitted to *Blood.*

Lee, G. "Elucidating the Role of the ARF6 Gene in Acute Myeloid Leukemia". (2018). Presented at 2018 Undergraduate Research Symposium, Salt Lake City, Utah.

HONORS AND AWARDS

Undergraduate Research Opportunities Program Grant 2017, 2018
A $1,200 stipend awarded to undergraduates who are performing research under faculty mentorship

Dean's List 2016-2020
A recognition given to students who earn a 3.5 or higher in at least 12 graded hours during any one term

Eccles Scholarship 2016
A comprehensive, four-year, undergraduate scholarship which covers tuition, housing, books and food. This award is given based on outstanding academic talent, exemplary character and exceptional leadership skill

COMMUNITY SERVICE

Head of Computation 2017 - 2020
Biomedical Engineering Society

- Organized campus events to help biomedical engineering students with an interest in computation develop skills
- Events: Getting started with Github and machine learning in Matlab
- Participated in monthly mentorship training and community volunteering

Volunteer 2012 - present
Technology Recreation Access Independence Lifestyle Sports

- Assist those with disabilities in accessing and reconnecting with the outdoors
- Activities: cycling, cross-country skiing, alpine skiing, kayaking, sailing, and swimming

Founder and Coach 2015 –2016
Utah Para-Table Tennis

- Collaboration with the Neuroworx rehabilitation facility

- Raised funding to purchase a competition-level table tennis table, paddles, and balls
- Hosted weekly lessons and annual tournament

COMPUTER SKILLS

Programming: Computer Vision, Deep Learning, Data Wrangling, Machine Learning, Image Processing, Signal Processing, Sensor Design, Object-Oriented Programming
Applications: Illustrator, Photoshop, Office, Prism, Asana, Slack, Github, ARCgis, Final Cut, Logic Pro
Operating Systems: Linux, macOS, Windows
Languages: Python, MATLAB, Java, SQL, LabVIEW, Bash, Arduino
Libraries: pandas, geopandas, numpy, scikit-learn, TensorFlow, jupyter, Airflow, AWS

LABORATORY SKILLS

***In Vivo*:** Intraperitoneal Injection, Retro-orbital Injection, Organ Harvest, Organ Fixation, Ear Clip, Genotyping, Colony Maintenance
In Vitro: Cell Maintenance, Intestinal Organoids, Lung Organoids, Lentiviral Transfection
Bench*:* Polymerase Chain Reaction, Real-Time Polymerase Chain Reaction, DNA/RNA Isolation, Western Blotting, Transformation, Protein Pull-Down, RNA Sequencing, CCK-8, Seahorse

PROFESSIONAL TRAINING

Machine Learning **2019**
Stanford (Coursera)

Deep Learning Specialization **2019**
Deeplearning.ai (Coursera)

TensorFlow in Practice **2020**
Deeplearning.ai (Coursera)

Modern Big Data Analysis with SQL Specialization **2020**
Cloudera (Coursera)

REFERENCES

Dr. Heidi Hanson, Assistant Professor
Surgery, Utah Population Database and Scientific Computing and Imaging Institute
Huntsman Cancer Institute
Email: Heidi.Hanson@hci.utah.edu

Dr. Shannon Odelberg, Research Associate Professor
Molecular Medicine
University of Utah
Email: sodelber@genetics.utah.edu

Jessica Kemper, Sustainable Foods Initiatives Manager
Sustainability
University of Utah
Email: jessica.kemper@utah.edu