Allison Chen

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EDUCATION

Princeton University SEP 2022-Present
Ph.D. Computer Science GPA: 4.0/4.0
Advisor: Dr. Olga Russakovsky

University of California, Los Angeles SEP 2018-JUN 2022
Summa Cum Laude GPA: 3.993/4.0
B.S. in Computer Science | Minor in Cognitive Science

PUBLICATIONS

Allison Chen, Ilia Sucholutsky, Olga Russakovsky, Thomas L. Griffiths. "***Analyzing the Roles of Language and Vision in Learning from Limited Data***". **CogSci 2024**. [paper]

Tian Yu Liu*, Parth Agrawal*, **Allison Chen***, Byung-Woo Hong, Alex Wong. "***Monitored Distillation for Positive Congruent Depth Completion***". **ECCV 2022**. * = equal contribution [code] [paper]

Alex Wong*, **Allison Chen***, Yangchao Wu, Safa Cicek, Alexandre Tiard, Byung-Woo Hong, and Stefano Soatto. ***"Small Lesion Segmentation in Brain MRIs with Subpixel Embedding"***. **MICCAI Brain Lesion Workshop 2021**. Oral Presentation. * = equal contribution [code] [paper]

RESEARCH PROJECTS

Role of Language in Vision-Language Learning SEPT 2023-Present
Dr. Olga Russakovsky, Dr. Tom Griffiths | **Princeton VisualAI Lab**

- Analyze the contribution of language to Vision-Language model performance by hypothesizing a cognitive architecture of the models and ablating various components.

Explainability & Model Alignment APR 2023-SEPT 2023
Dr. Olga Russakovsky | **Princeton VisualAI Lab**

- Investigated concept-based explanations and their alignment to models and humans as a means of identifying how explanations can contribute to humans over-trusting models.
- Explored relationships between alignment of concept-based explanations to humans and generalization properties of models.

Monitored Distillation OCT 2021-JUN 2022
Dr. Stefano Soatto | **UCLA Vision Lab**

- Built an ensemble of teachers by computing a criterion based on reprojection error to train a lightweight student model in unsupervised sparse to dense depth completion.
- Addressed weaknesses of each teacher model and ensemble holistically by balancing distilled loss with typical unsupervised color and structural reprojection losses using similar criteria.

Small Lesion Segmentation MAR 2020-OCT 2021
Dr. Stefano Soatto | **UCLA Vision Lab**

- Proposed a technique using subpixel methods to retain details of a brain MRI scan that are often lost through rapid spatial downsampling and max-pooling in medical image segmentation works.
- Devised method that outperforms the state of the art while reducing memory requirements by 72.3% and 57.5% for training and testing respectively.

Monotonicity Verification Extension APR 2021-JUN 2021

Dr. Guy Van den Broeck | **Statistical and Relational Artificial Intelligence Lab (StarAI)**

- Extended monotonicity verification system for small fully connected networks to actor-critic based models.
- Developed **Python** scripts to convert between checkpoint save formats between **TFLearn** and **Keras** APIs for **TensorFlow** to extend generalizability.

HONORS & AWARDS

Fellowships/Scholarships

- 2024- NSF Graduate Research Fellowship
- 2022-23 Intel Graduate Diversity Scholarship
- 2021-22 APLUS Scholarship
- 2021-22 Tau Beta Pi Forge No. 111 Scholarship
- 2021-22 Society of Women Engineers Los Angeles Scholarship
- 2020-21 Cornelius Leondes UCLA Undergraduate Scholarship
- 2020-21 National Society of Women Engineers Intel Undergraduate Scholarship
- 2020-21 Society of Women Engineers Los Angeles Scholarship
- 2020-21 Society of Women Engineers at UCLA Scholarship
- 2020-21 UCLA Faculty Women's Club Scholarship
- 2018-19 UCLA Women in Engineering Scholarship

Society Involvement

- 2018- Society of Women Engineers
- 2021-22 Google Computer Science Research Mentorship Program
- 2020-22 Upsilon Pi Epsilon Computer Science Honors Society
- 2019-22 Tau Beta Pi Engineering Honors Society

Achievements & Recognition

- 2022 UCLA Engineering Achievement Award in Student Welfare
- 2022 Engineering For Humanity Research Symposium Director
- 2018-22 UCLA Dean's Honors List
- 2018 1st Place at UCLA Idea Hacks Hardware Hackathon

TEACHING

Teaching Assistant, ***Princeton University***

- Art & Robotics Independent Work Class JAN 2024-MAY 2024
- Introduction to Machine Learning SEP 2023-DEC 2023

LEADERSHIP & OUTREACH

Lab Learning Program, *Princeton University*

- Mentor two high school interns conducting independent research JUL 2023-AUG 2023

Prison Teaching Initiative, *Princeton University*

- Math and science tutor for incarcerated students — JAN 2023-MAY 2023

Graduate Society of Women Engineers, *Princeton University*

- Chapter co-founder at Princeton University — OCT 2022-Present

Mentorship

- Society of Women Engineers @ Princeton Mentor — NOV 2022-Present
- UCLA Alumni Mentor (3 mentees) — SEP 2022-Present
- Princeton Computer Science Pre-Application Mentor — NOV 2022

Society of Women Engineers @ UCLA, *UCLA*

- Internal Vice President and Executive Board Member — APR 2021-JUN 2022
- Evening with Industry External Director and Executive Board Member — APR 2020-APR 2021
- SWE Families Head — OCT 2020-JUN 2021
- Student Relations Director and Executive Board Member — APR 2019-APR 2020

Grad2Mentor Program, *UCLA*

- Program Coordinator — APR 2021-SEP 2021
- Mentor — APR 2021-JUN 2022

WORK EXPERIENCE

Software Engineering Intern — JUN 2021-SEP 2021
Microsoft | *Azure Communication Services*

- Implemented device & network tests in **Typescript** to predict audio and video calling capabilities.

Software Engineering Intern — JUN 2020-SEP 2020
Oracle Corporation | *Performance, Scalability, and Reliability Team*

- Developed **Node.js** framework in **Typescript** to aid internal teams with developing unified functional and performance tests on user interfaces.

Machine Learning Application Intern — JUN 2019-AUG 2019
The Field Museum – Chicago, IL | *Botany Research Team w/ Dr. Matt von Konrat*

- Developed deep learning models in **TensorFlow** and **Keras** to classify botanical specimen images to organize museum's contributions to public online botanical database

SKILLS

- Languages: Python, C++/C, Typescript/Javascript, Java, HTML/CSS
- Frameworks/Packages: Pytorch, Tensorflow, Keras, Numpy, React
- Technologies: Unix, Git, Latex
- Hobbies: Spikeball, dance, cooking, and reading! Currently reading: *Tom Sawyer* by Mark Twain