Christopher Seybold

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EDUCATION

University of California, Los Angeles (UCLA); Los Angeles, CA

Mathematics of Computation B.S. *June 2025*

- GPA: 3.65 / 4.00
- Relevant course work: Theoretical Foundations of Reinforcement Learning, Machine Learning, Probability, Statistics, Linear Algebra, Optimization, Algorithms, Advanced Programming in C++, Programming in R, Numerical Analysis, Ordinary Differential Equations, Mathematical Modeling
- Clubs: Undergraduate Economic Society, Bruin Medical Entrepreneurs

EXPERIENCE

Nano- and Bio-Photonics Laboratory UCLA

Researcher: Virtual Tissue Clearing and Staining *August 2024 - Present*

- Writing image registration software to align the orientation of tissue sections and correct for nonlinear deformations with pixel-level accuracy
- Implementing deep learning models based on conditional GANs to rapidly transform terabytes of cross-registered pairs of uncleared and unstained tissue autofluorescence images into ones that mimic traditional 2D fluorescently stained tissue sections

Researcher & Co-Inventor: BlurryScope *September 2023 - Present*

- Built an automated Python-based image processing pipeline for an AI-enabled continuous scanning microscope to provide a cost-effective and compact solution for tissue section analysis, integrating specialized hardware with a neural network-based model to swiftly process motion-blurred histological images and perform automated pathology classification
- Tested a variety of deep learning architectures to achieve final accuracies exceeding 75% and 90% for 4-class and binary classification networks, respectively, on HER2 breast cancer score classification, which is within 5-10% of state-of-the-art pathology scanners costing ~100x more than our build

UCLA Department of Atmospheric and Oceanic Sciences UCLA

Research Scientist *June 2024 - Present*

- Programming a deep learning model to assess fire risk associated with any given location using TensorFlow and Google Earth API
- Testing the viability of newly developed AI-based weather forecasting models to predict extreme weather events and examining their robustness for everyday predictions

Data Science in Cardiovascular Medicine Laboratory UCLA

Research Assistant *September 2023 - January 2024*

- Developed a genomic data simulation in R and performed a statistical analysis to measure expected correlation between single nucleotide polymorphisms and post-translational modifications of proteins

AWARDS

- Best oral presentation and best demonstration at the 2023-2024 Koç, NSF & HHMI Undergraduate Research, Training, and Innovation Program for Translational Biophotonics and Telemedicine Technologies

SKILLS AND CERTIFICATIONS

- Python (Tensorflow, Scikit-learn, Scikit-image, OpenCV, NumPy, Pandas, Matplotlib, etc.), C++ (Advanced data structures and algorithms), MATLAB (Numerical Analysis), R (Statistical Analysis and Computing), Excel, Linux
- Strong communication skills honed through two years in the hospitality industry and four years as a math tutor
- Completed Columbia University's Financial Engineering and Risk Management Specialization through Coursera
- Completed Stanford University's Machine Learning Specialization through Coursera