

ALEXANDER CHIEN

(951) 892-9896 | alexchien22@g.ucla.edu | Los Angeles, CA | www.linkedin.com/in/alexander-chien | <https://github.com/alchien22>

EDUCATION

University of California, Los Angeles (UCLA), Los Angeles, CA Expected June 2026

B.S. Computer Science | Upper-division GPA: 3.82 / 4.00

- Coursework: Data Structures and Algorithms, Programming Languages, Operating Systems, Software Construction, Computer Architecture, Neural Nets and Deep Learning, Adv. Neural Nets and Deep Learning (Grad), CV Foundations, Deep Learning for CV, Probabilistic Models in Computational Genomics
- Clubs: ACM AI, AI Safety, exploretech.la

EXPERIENCE

Chang's Group at UCLA NLP | Undergraduate Researcher June 2024 - Present

- Investigating long-context memories for embodied multi-agent systems using LoRA, improving knowledge retention in complex simulations within the VirtualHome environment
- Automated extraction of point clouds from depth images in VirtualHome to enhance agent learning and spatial understanding
- Creating scripts to generate synthetic LLaVA training dataset of thousands of multi-action agent tasks consisting of first-person agent views corresponding to the completion of each action

UCLA StarAI Lab | Undergraduate Researcher September 2023 - Present

- Examined application of soft and hard constraints in generative models, including graphically structured diffusion models and LLMs for easily constrained tasks (e.g. sudoku)
- Implemented a custom sentential decision diagram to create "exactly one" hard constraint for GPT-2 filtered generation, reducing constraint creation complexity from $O(n^2)$ to $O(n \log n)$ with a 50,257-word vocabulary
- Researching improvements to SIMPLE (a discrete gradient estimator) in mixtures of experts as an alternative to soft-merging (SMEAR) and 7 other discrete and non-discrete sampling tricks

CreatorHub | Software Engineer Intern June 2023 - August 2023

- Developed front-end and back-end of brand competition creation page and password reset pages (JavaScript, Flask, HTML, CSS) for UCLA startup CreatorHub's MVP with mongosh and ItsDangerous API tokens
- Designed JSON schemas for users and brand competitions using MongoDB's schema validation
- Implemented password security protocols (password requirements, SHA-256) and re-designed signup and login pages to improve user onboarding

PROJECTS

Novel View Synthesis | Co-author February 2024 - March 2024

- Analyzed 3 approaches to novel view synthesis (light-field rendering, NeRFs, and Gaussian Splatting) in a team of 3
- Wrote article analyzing 3D-GS methodology, comparing its efficacy to other SoTA methods (e.g. Mip-NeRF 360)

Action Prediction for EEG Signals | Developer February 2024 - March 2024

- Tested vanilla CNN, CNN hybrids (RNN, LSTM, GRU), and multi-head attention for classifying 4 classes of patient activities in data set A of the BCI Competition
- Achieved over 70% accuracy through model ensembling and data augmentation methods (time reversal, injecting Gaussian noise, etc.) with limited data (2115 samples)

HoneyComb | Developer

- Collaborated in a team of 5 to develop Honeycomb, a website designed to facilitate project collaboration and team formation among college students
- Focused on developing project search, user profiles, and settings, while integrating 10+ security and UI features for seamless UX

LEADERSHIP & INVOLVEMENT

Bruin Spacecraft Group | Webmaster October 2023 - September 2024

- Lead team of 6 in revamping and maintaining the Bruin Spacecraft Group website, boosting user-friendliness for sponsors and prospective members; mentoring team in best practices for web development
- Collaborated closely with 7 other admin teams to ensure accurate display of each team's progress on website

SKILLS

- Programming Languages: Python, C++, C, JavaScript, Haskell
- Frameworks: PyTorch, TensorFlow, Flask, React
- Other: Git/GitHub, MongoDB, Linux, HTML, CSS, Node