SIZHU (LINDSAY) CHENG

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EDUCATION

Stanford University *Septembmer 2017 - June 2019*
M.S. Computational & Mathematical Engineering GPA: 3.61

University of California, Los Angeles *July 2013 - June 2017*
B.S. Applied Mathematics and *B.S.* Neuroscience. GPA: 3.71
Honors: Cum Laude, Deans List, ALD | PES Honor Society, Golden Key International Honor Society

RELEVANT EXPERIENCE

Google LLC September 2023 - Present
Senior Software Engineer - AI Product Expansion *Mountain View, CA*

- Collaborate cross-functionally with diverse product teams to incubate and launch innovative new products within Google
- Led the modeling and quality assurance efforts for the successful launch of Help Me Write in Chrome
- Partnered with the research team to translate advanced model training techniques into production-ready, servable models for agentic systems and functional UI automation products.
- Pioneered the end-to-end development, including the critical production serving, of an agentic search system that significantly boosted information retrieval efficiency and overall quality.
- Designed and implemented a tree search algorithm for the long running browsing agent
- Developed comprehensive evaluation rubrics for various products, collaborating closely with product managers to define user journeys and establish key prioritization criteria.

Snowflake Inc (Acquired Neeva) May 2023 - August 2023
Software Engineer - Snowflake AI *San Mateo, CA*

- Advised the dense retrieval system and large scale embeddings generation
- Helped iterate and train on the large scaled models for the next-generation core copilot product.
- Worked cross-functionality to align the data, training criteria and customer usages on Large Language Models.

Uphonest Capital April 2023 - Present
Scout *Santa Clara, CA*

- Assist Uphonest Capital in discovering hidden, exceptional startup, mainly in AI, search, Saas, health and fan-art.

Neeva December 2019 - May 2023
Software Engineer, Machine Learning and Search Ranking *Mountain View, CA*

- Fine-tuned large language models and deployed it in production to improve the retrieval and ranking quality of the search results page
- Worked as early members of the team to personalize User's preferred results in both *Home* and the search result page
- Enhanced the quality and efficiency of index selection within the core information retrieval system, optimizing search performance.
- Significantly boosted local search quality through targeted improvements in query understanding and results ranking.
- Integrated several third-party APIs into the product and design an automated user-interested contents generator, which is widely used among the users.
- Architected and built the dense retrieval system within the core search engine infrastructure.
- Mentored an intern and multiple new graduates, providing early-career guidance and fostering their professional development.

Acrobat Genomics March 2023 - June 2023
Associate Computational Biologist (part-time) *San Carlos, CA*

- Helped build the AI generative model for a protein engineering platform

Stanford University School of Medicine, Neurobiology Department April 2019 - December 2019
Graduate Research Assistant *Palo Alto, CA*

- Represented neural mechanism using deep learning model given electrical step inputs
- Conducted the experiment to reveal the intertwined neural signal information using Recurrent Neural Network model
- Extended the system into a more in-depth dynamics which represented the human neural activities during prediction of environmental changes

Stanford University, Psychology Department January 2019 - June 2019
Graduate Research Assistant *Palo Alto, CA*

- Studied mathematical cognition and the development of human abilities to obtain mathematical perceptions
- Designed a deep neural network model to study how human learn magnitude comparison and simple addition for one-digit numeral
- Analyzed and interpreted how approximate arithmetic training may affect preschoolers performances in simple math problems

SAP Labs, LLC June 2018 - August 2018
iXp Intern - Applied Data Science and Machine Learning (NLP), Recast Conversational AI *Palo Alto, CA*

- Helped create a platform for collaborative chatbots satisfying various needs from customers
- Tested 50+ different combinations of encodings and clustering algorithms on data with ground truth
- Applied the best algorithm to cluster the data without ground truth and output the results based on how dense the clusters are, and collaborated with the front-end team so that users can easily visualize the suggested sentences based on intents when creating chatbots
- Incorporated more embeddings and similarity computation methods into the existing algorithms

UCLA Math Department September 2016 - June 2017
Programming in Computing Reader *Los Angeles, CA*

- Helped instructors create the grading rubrics
- Graded homework in Introduction to Programming (C++) course and provided feedback to students about their algorithm

ADDITIONAL EXPERIENCES

Deloitte Enterprise Consulting (Shanghai) Co., Ltd. Shenzhen Branch Summer 2016
Enterprise Risk Service, Financial Service Industry Intern *Shenzhen, China*

- Reviewed the manual of constructing online risk-management systems for companies, and edited the manual according to requests from customers
- Collected risk-management information from annual reports of various securities companies, and organized information for supervisors reference
- Discussed and consulted with group members best modeling strategies for every particular case

UCLA David Geffen School of Medicine, Neurology Department January 2016 - June 2017
Undergraduate Research Assistant *Los Angeles, CA*

- Studied the pathology of Parkinsons Disease by conducting behavioral experiments on zebrafish with a small team
- Monitored the movements of zebrafish using Viewpoint software to focus on transgenic genes pathological in Parkinsons Disease
- Analyzed the behavior data, including over 10,000 speed data, which reflects instantaneously the motion of the fish above a certain threshold
- Imaged the neuron distributions inside the fish bodies and counted any significant loss of neurons

SKILLS

Programming Languages Python, Golang, C++, Julia
Tools Kubernetes, Databricks, Spark, Tensorflow, Pytorch, Airflow, Grafana

PUBLICATIONS

Sizhu Cheng, Arianna Yuan. *Understanding the Learning Effect of Approximate Arithmetic Training: What is Actually Being Learned?*
Paper accepted for the 17th Annual Meeting of the International Conference on Cognitive Modeling, Montreal, Canada

Sataree Khuansuwan, Lisa M. Barnhill, **Sizhu Cheng**, and Jeff M. Bronstein. *A novel transgenic zebrafish line allows for in vivo quantification of autophagic activity in neurons*, Autophagy 2019

SERVICE ACTIVITIES

Stanford Women in Math Mentoring, Stanford University Fall 2017 - Present
Mentor *Palo Alto, CA*

- Provides advises to women undergraduates who consider graduate school in mathematical fields
- Assists women undergraduates in arranging their undergraduate studies and facilitates them to find their career goals

Global Medical Training, UCLA Spring 2015 - Spring 2017
Medical Donation Commitee *Los Angeles, CA*

- Contacted past donors, including local hospitals, health centers, and other organizations for medical supplies
- Worked with fundraising team to raise funds to purchase the necessary medications and medical equipment
- Searched and applied for grants to raise funds for the committee and wrote applications when necessary