MATTHEW K. SCHULZ

mkschulz@usc.edu | (925) 202-3258

https://www.linkedin.com/in/matthew--schulz | https://github.com/mkschulz9

EDUCATION

M.S. Computer Science in AI | **University of Southern California, Viterbi School of Engineering** August 2023 - May 2025 (Exp.)

- *Relevant coursework: Machine Learning, Deep Learning, Reinforcement Learning, Natural Language Processing, Algorithm Design & Analysis, Large Scale Optimization for ML*

B.S. Computer Science | **University of California, Davis** - Cumulative GPA: 3.8 September 2021 - June 2023

- *Relevant coursework: Foundations of AI, Operating Systems*

A.S. Computer Science | **Diablo Valley College** - Cumulative GPA: 3.57 September 2018 - July 2021

- *Relevant coursework: Object Oriented Programming C++, Data Structures, Calculus, Linear Algebra, Discrete Mathematics*

WORK EXPERIENCE

Machine Learning Researcher | **USC AutoDrive Lab** (Los Angeles, CA) January 2024 - Present

- *Research, implement, and extend state-of-the-art, open source ML models to plan trajectories of self-driving cars in Python*
- *Analyze autonomous vehicle challenges hosted by nuPlan, Waymo, Carla and present technical overview of top submissions*
- *Develop and publish novel research with aim of addressing specific gaps in existing autonomous driving technology*

Lead Software Engineer, Mentor | **SchedGo** (Davis, CA) September 2022 - September 2023

- *Led 8-member web application extension, culminating in 1st place win at UC Davis Big Bang Business Competition 2023*
- *Collaborated in cross functional team environment, developing strong written and verbal communication skills*
- *Drove Agile product delivery, focused on boosting product value, iterative PoCs, and adapting to startup goals*
- *Directed weekly meetings and designed creative monthly and quarterly goals, resulting in 95% on-time task completion*
- *Materialized 3 REST API endpoints, over 5 Firestore data schemas, and CRUD services, enhancing backend functionality*
- *Designed and implemented interactive text/pdf parsing system, resulting in 93% positive feedback during user testing*

Software Engineer | **SchedGo** (Davis, CA) June 2022 - September 2022

- *Built 7-step frontend overlay tutorial using Joyride and React, improving user comprehension by 75%*
- *Implemented Google Analytics for tracking user activity, providing credible data for business team's product pitches*
- *Utilized Git for version control, contributing over 50 commits to GitHub repository, following best practices*
- *Wrote and maintained high quality documentation detailing various application components, assisting in knowledge transfer*

FEATURED PROJECT

Multi-Modal Sentiment Analysis using CNN and Transformer Models in Python September 2023 - December 2023

- *Developed facial image emotion classifier powered by VGG16, trained on FER2013 dataset, achieving 90.33% accuracy rate in classifying 7 emotions* | ***Computer Vision (CV)***
- *Fine-tuned RoBERTa on GoEmotions dataset for multi-label classification in text across 14 emotions, achieving 10% performance improvement* | ***Natural Language Processing (NLP)***

Toolkits Used: *Keras, Hugging Face, Pandas, NumPy, TensorFlow, PyTorch*

Project Link: *https://github.com/marreddysainikhilreddy/emotion-classification/tree/master*

LEADERSHIP & INVOLVEMENT

SHPE (Society of Hispanic Professional Engineers) | **University of Southern California** January 2024 - Present

- *Active member of USC's SHPE chapter engaged in promoting STEM education & career development in Hispanic community*

STEM Instructor | **STEMNETICS** September 2023 - Present

- *STEM instructor for underserved communities, positively influencing children's futures through educational empowerment*

Computer Science Tutor | **University of California, Davis** November 2021 - March 2023

English Tutor | Diablo Valley College September 2019 - June 2021

CERTIFICATIONS

Databases and SQL for Data Science with Python | IBM In Progress

- *Data analysis using SQL/Python, creating/managing relational databases, crafting SQL queries, and advanced SQL methods*

Intro to TensorFlow for Artificial Intelligence, Machine Learning, & Deep Learning | **DeepLearning.ai** September 2023

- *TensorFlow best practices, neural network creation, computer vision training, and convolutional network improvement*