

Anthony Tong

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EDUCATION

University of California, San Diego

La Jolla, CA

B.S. Computer Science, B.S. Applied Mathematics | GPA: 4.0

Class of 2027

- Classes: Math 20C-E, 18, 109, 154, 180A; CSE 11, 12, 15L, 30, 101

HONORS & AWARDS

- Regents Scholarship @ University of California, San Diego
- NSF Research Experiences for Undergraduates @ University of Nevada, Las Vegas

RESEARCH EXPERIENCE

ESB.AI Lab | Python, OpenCV, Label Studio, PyTorch

La Jolla, CA

AI/Computer Vision Research | Object Detection, Image Segmentation

Oct 2023 - Present

- Created [DynamicDL](#): a CV dynamic data loading library released on PyPI
- Led the development of CVPO: a dynamic training library for internal lab use
- Implemented various convolutional neural networks (CNNs) used to detect avocado tree branch growth and create image masks
- Performed hyperparameter tuning to achieve high accuracies for abalone classification models

AI SUSTEIN REU | Python, PyTorch

Las Vegas, NV

Visiting Researcher @ University of Nevada, Las Vegas | Multimodal LLMs, Tokenization

Jun 2024 - Present

- Studied the effects of tokenizer vocabulary replacement on its application in LLM domain adaptation

Regents Scholars Research Initiative | Python, sklearn, cvxpy

La Jolla, CA

Machine Learning/AI Research

Sep 2023 - Jun 2024

- Worked directly with Professor Arya Mazumdar on a variety of research topics including nonlinear estimation, generative models, and the performance of model mismatch
- Conducted experiments to validate the effect of temperature on sample complexity in logistic regression
- Investigated quantization algorithms for generative models and staircase/hierarchical learning

OTHER EXPERIENCE

Ridge Security Technology Inc. | Python

Remote | Fremont, CA

Returning Intern

October 2023 — Jan 2024

- Worked with a small team to develop plugins which integrate exploit scripts into the RidgeBot software
- Wrote scripts that automatically scanned for vulnerabilities and executed exploit code upon detection, achieving remote code execution and more

Summer Intern

Jun 2022 — Aug 2022

- Investigated Windows Active Directory CVEs and created proof-of-concept (PoC) scripts

MISC. PROJECTS

TritonThink | Python, JavaScript, pycord

Project

Scheduling and Enrollment Chatbot

Sep 2023

- Developed a Python-based Discord bot to aid students with enrollment procedures
- Implemented a multi-course search function which returned a list of recommendations for each class
- Maintained a clean frontend experience for users and effectively responded to feedback

Sentence-Based Hangman | Python, srilm

Project

Hangman Algorithm using Information Theory and Large Language Models

Dec 2022

- Leveraged LMs to predict sentence probabilities to create an information theoretical Hangman solver
- Used mutual information and conditional probabilities to create an optimal information-theoretic algorithm