Anthony Y. Wang

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Education

The University of Texas at Austin **Austin, TX**
B.S. in Computer Science, Turing Scholar *Expected May 2026*

- **Courses:** Data Structures Honors, Discrete Mathematics Honors, Computer Architecture H (planned)
- **Awards:** 1st Place Winner, Team MVP, VMWare High School Hacks • 1st Place Winner, PackHacks • Best Artificial Intelligence/Machine Learning, MenloHacks • Gold Division, USACO • 4-time AIME Qualifier. AMC 10/12 Distinction • World Champion (Inspire Award), FIRST World Championship

Skills

- **Languages/Frameworks:** C++, Java, Python, JS/TypeScript, React/React Native, Bash, Flask, FastAPI
- **Data Science/ML:** PyTorch, JAX, Tensorflow, Keras, NumPy, Pandas
- **Misc:** AWS/Azure, Docker, Conda, Linux, Git, LaTeX

Experience

UT Southwestern Medical AI and Automation Lab *Paid AI Research Intern (May 2020 - August 2023)*

- Led the design and implementation of a custom autonomous system to segment head and neck tumors.
- Integrated a range of deep learning models including multi-head attention mechanisms, spatial attention techniques, 3D convolutional neural networks, and encoder-decoder architectures using PyTorch for efficient and precise medical image processing. Achieved DICE score of 0.779 on HECKTOR dataset.
- Led software development for an automated patient-trial matching machine learning R&D project by integrating state of the art Large Language Models (GPT-4) with BERT-based patient deidentification.

TEAM USA / Team 8565, FIRST Robotics *Software Engineering Team Lead (Dec 2020 - May 2023)*

- Developed autonomous robot control framework with graduate level control theory and computer vision.
- Developed a novel object localization system using homography and time-of-flight sensors.
- Implemented real-time trigonometry algorithms to compute delta vectors from odometry wheel sensors 200 times per second, enhancing robot localization through time-integrated displacement calculations.

Project Developer - Collective CO2 Tracking System *Software Developer (June - Oct 2022)*

- Addressed the challenge of scarce high-quality CO2 sensors by proposing an innovative approach: integrating multiple affordable sensors to emulate the performance of a high-grade CO2 sensor.
- Developed custom LSTM model using Tensorflow and deployed to a Raspberry Pi for real-time analysis.

Projects

Burt's Helping Hand (FIRST Global Innovation Award Finalist)

- Led a team of ten to design a training device in the form of a toy that helps children with Developmental Coordination Disorder (DCD) rehabilitate. Designed machine learning algorithms to adapt training processes to individual users.

Antiddiction: The Antidote to Addiction (1st Place, Team MVP, VMWare High School Hacks)

- Developed an app that predicts when relapses may occur and immediately alerts one's medical providers
- Created FastAPI backend to serve custom XGBoost predictive model trained on SAMHSA addiction database, created React Native frontend to allow users to track and report addiction relapse.

Publications

Octree Boundary Transfiner: Efficient Transformers for Tumor Segmentation Refinement

- 1st Author paper peer-reviewed, accepted and presented at MICCAI 2022 (25th International Conference on Medical Image Computing and Computer Assisted Intervention). Top 10% ranking, MICCAI HECKTOR Grand Challenge, among international research and industry labs.