Darren Chan

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EDUCATION

University of Texas at Austin, College of Natural Sciences **Austin, TX**

B.S Computer Science *August 2024 – May 2028*

- **Relevant Coursework**: Object-Oriented Programming, Data Structures, Applied Data Science, Calculus III

McKinney Boyd High School **McKinney, TX**

- **Honors**: AP Scholar with Distinction, National Honors Society *August 2020 - May 2024*

PROFESSIONAL EXPERIENCES

Henkelman Research Group, University of Texas at Austin **Austin, TX**

Computational Materials Researcher *May 2025 – Present*

- Migrated and optimized a GPU-accelerated isomorphic search algorithm and batching to the Kinetic Monte Carlo database (Python, Java, C++), achieving a 2.6× speed-up in query handling and graph-construction workflows
- Developed an ensemble machine-learning model method to predict adsorption energies from atomic-environment descriptors, reducing computational costs and time of traditional DFT calculations
- Working on integrating an Iterative Closest Point alignment module into the database pipeline, ensuring accurate spatial registration of atomic configurations between simulation snapshots

Information Security Office, University of Texas at Austin **Austin, TX**

Security Analyst *May 2025 – Present*

- Monitored university, state, and partnered networks with Splunk, Zeek, and Palo Alto firewalls, escalating critical incidents to incident-response teams
- Conducted vulnerability assessments and internal penetration testing with YARA and Sigma rule sets, collaborating with system owners on high-severity findings
- Outreached and led student cohorts of 10+ analysts to regional hospitals and clinics, delivering threat-intelligence briefings and security-awareness workshops for both technical and non-technical staff

Dr. Yapeng Tian Lab, University of Texas at Dallas **Dallas, TX**

Research Intern *June 2023 – Aug 2023*

- Engineered a PyTorch-based 3D CNN model for automated detection of autism-related behaviors utilizing OpenCV for ETL, custom spatiotemporal data-augmentation pipelines, and attention modules for self-stimulatory movements
- Implemented an audio-visual active-speaker detection pipeline, extracting MFCC and log-Mel spectrogram features alongside facial embeddings, training a Bi-LSTM with multi-head attention in PyTorch
- Led end-to-end model validation, testing, and deployment, enabling pilot clinical studies for clinical and neurological research at UTD to deliver real-time monitoring of social engagement and behavioral markers

PROJECTS

- **Violence Recognition Model** – Developed a deep learning framework with InceptionV3 to classify violent and non-violent video footage with 89% accuracy. Utilized Python for implementation and trained on a labeled dataset of violent and nonviolent footage
- **Incarceration in Texas Analysis** – Conducted Exploratory Data Analysis on Texas's current inmate population, using Python and R, to analyze the impact of demographics and other factors that influence parole decisions. Presented key trends in incarceration and parole outcomes to the City of Austin

SKILLS/ INTERESTS

Programming Languages: Proficient with Java, Python; Advanced with JavaScript, SQL, R; Exposure to C++, C#
Data Science & Machine Learning: AWS Certified AI Practitioner, Familiar with Pytorch, Scikit-learn
Software & Tools: Proficient with Git, Burp, Linux, Splunk, Zeek, Nmap, Nessus, Nikto, Metasploit, Wireshark
Interests: Quantum Computing, Photography, Cello, Strength Training, Cybersecurity, Artificial Intelligence