Derek Chui

Curriculum Vitae

Santa Clara University, Computer Science & Engineering, 500 El Camino Real, Santa Clara, CA 95053

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Education

Santa Clara University   Sep 2023 - Jun 2027
- Bachelor of Science in Computer Science and Engineering, Minor in Responsible Artificial Intelligence
- Relevant Coursework: Data Structures, Discrete Mathematics, Linear Algebra, Object Oriented Programming, Probability and Statistics, Unix Scripting and Automation, Human Computer Interaction, Programming Languages, Software Engineering, Theory of Algorithms, Information Storage, Undergraduate Research

Football Analytics Projects

Matchday   Jan 2026 - Present
- Account based football **analytics platform**, coaching **dashboards**, performance center, NCAA D1 coaching staff.
- **Automated** Wyscout tool, integrate **Catapult**, VALD, Output **APIs**, stores encrypted credentials, Flask, **Python**.

Hudl Wyscout Match Report Extension   Jan 2026 - Present
- **Hudl Wyscout** compatible **reporting app**, **100+** aggregates, athlete **dashboards**, match review PDFs, **KPIs**.
- **100+** scout **metrics**, supports match, season review, player evaluation, opposition **analysis**, talent identification.

Player Performance Outliers   Sep 2025 - Present
- **100+ Catapult**, VALD, Output **KPIs**, **100+ report** pages, NCAA D1, **Python**, **NumPy**, **Pandas**, **Matplotlib**.
- **Automated pipeline**, workload trends, injury risks, outliers, **Q-learning (ML)** & **XGBoost** advises next steps.

Premier League Scouting   Jan 2026 - Mar 2026
- PL Scouting **database**, FPL & Understat **APIs**, **700+** players, minute & role based filters, comprehensive sorting.
- Detailed spreadsheet profiles, percentile **visuals**, **dashboards**, player comparison, export ready scouting metrics.

Player Actions v Usage Rates   Sep 2025 - Nov 2025
- **300k+** views on X in **10** days via posts with efficiency profiles across positions to inform smarter squad building.
- **Analysed 50+** Premier League players, correlated player productivity, revealing misused or underutilized players.

2025 Summer Squad Assessment   Aug 2025 - Sep 2025
- **Processed**, **cleaned**, & compared over **50** rumored and new signings against current & recently departed players.
- **Reported insights** on positional needs & quantify fit, strengths, and risk flags during the 2025 summer window.

Progression Analysis (24/25)   Jul 2025 - Aug 2025
- **Collected** progression (passes, carries, receptions) over **42** games across a Premier League team's 24/25 season.
- **Visualizations** show lower progression correlates with positive results for bottom half teams, and vice versa.

Network Optimization Projects

Semantic Q Learning NOMA   Sep 2025 - Present
- **Built** & **maintained** a **Machine Learning (ML)** algorithm, **1000+** episodes, realistic semantic NOMA model.
- Within **5%** of optimal network utility even with scalability for future **6G** wireless systems and ethical implications.

Semantic Greedy NOMA   Mar 2025 - Aug 2025
- Greedy algorithm, semantic model, beats **monitored** baselines implemented from other research papers by **25%**.
- Strong **visualizations** & **metrics** extended to **data** driven optimization workflow in Semantic Q Learning NOMA.

Pinch Antenna Assisted NOMA   Aug 2025 - Present
- **Simulated** enhanced NOMA using pinch antennas to amplify user channels based on proximity over **500** trials.
- Improved sum rates by **15%**, potential for scalable user grouping and improved sum rates in future **6G** networks.

Research

IEEE Wireless Communications and Networking Conference	Jan 2026

- Submission: [Semantic-Aware Learning-Based NOMA User Grouping for Programmable 6G RANs](#)

SCU School of Engineering Research Showcase	Jan 2026

- Accepted: [Semantic Aware User Grouping for 6G NOMA Networks using Q-Learning](#)

Hackworth Applied Ethics Research Grant	Nov 2025

- Submission: [How AI Biases Can Silence Certain Users in 6G Mobile Communications](#)

IEEE Consumer Communications & Networking Conference Poster	Oct 2025

- Accepted: [Semantic Utility Aware User Grouping for 6G NOMA Networks (2 Page)](#)

BayLearn Machine Learning Symposium	Sep 2025

- Submission: [Semantic Aware User Pairing for 6G NOMA Networks](#)

IEEE Consumer Communications & Networking Conference	Aug 2025

- Submission: [Semantic Utility Aware User Grouping for 6G NOMA Networks](#)

2FURS (Faculty-mentored Undergraduate Research) Grant	Apr 2025

- Awarded in undergraduate research funding

Experience

Research Assistant	Apr 2025 - Present
Santa Clara University	*Internship	Hybrid*

- Work in Wireless Intelligent Networks (WIN), **Reinforcement Learning (RL)** models for 6G wireless systems.
- **Analysed 25+** papers, implemented **20+ simulations**, and compiled into over **10** submissions to related venues.

Teaching Assistant	Sep 2025 - Dec 2025
Santa Clara University	*Part-time	Hybrid*

- Facilitated lectures, led practicums, and office hours for **61** students in programming paradigms (CSEN 171).
- Developed assignments and autograders, **database visualizations** and **analysis** reveals increased scores by **5%**.

Sales Development Representative	Jul 2024 - Apr 2025
[*ProofJump*](#)	*Part-time	Remote*

- Connected with **100+** professionals in the **SaaS**, **B2B**, and SDR industries through LinkedIn Sales Navigator.
- Automated **100+** outreach emails to specific audiences and set up inbound & outbound routines.

Training Specialist	Jul 2024 - Nov 2024
Honeywell	*Part-time	On-site*

- **10+** training videos on Honeywell XLS fire alarms, planned courses, worked on site at various apartment buildings.
- Assisted instructors during training with **50+** students over **15** weeks, Honeywell Building Automation Systems.

[**Video Editor**](#)	Feb 2021 - Jul 2024
Freelance	*Remote*

- Managed **70** video projects over **3** years for clients with Final Cut Pro under fluid deadlines in an efficient manner.
- Organized & detail oriented file management for footage, project folders, exports, focused on quality & consistency.

[**Content Creator**](#)	Dec 2015 - Feb 2021
Self-Employed	*Remote*

- **170** YouTube content over **5** years on gaming, lifestyle, tech, video essays, montage segments, and more.
- Hosted a podcast with **22** discussions and interviews, blogs with **30** in depth articles, compiled into a short book.

[Projects](#)

[**Football Analytics**](#)	Jul 2025 - Present

- **Hudl Wyscout**, **Catapult**, automation, **100+ reports**, **dashboards**, scouting, opposition **analysis** via **Python**
- **Reported 100+ visualizations** with over **200 metrics** across **1000+** players, **500k+** total impressions on X.

[**Network Optimization**](#)	Mar 2025 - Present

- Developed semantic **optimization** methods for **6G** NOMA wireless systems, **Reinforcement Learning (RL)**.

- Modular **simulation** pipelines, up to **25%** gains over baselines, near optimal utilities, in **1000+** episodes & trials.

[Personal Website](#)   Mar 2025 - Jun 2025
- Done with Netlify frameworks, **Astro**, **TypeScript**, **CSS**, and **JavaScript**, averaging **2000+** requests per week.

[Benchmark](#)   Jun 2024 - Mar 2025
- Basics of **12** different languages and concepts including **C**, **C++**, **Java**, **Python**, **HTML**, **CSS**, and **Javascript**.

[Fantasy Premier League](#)   Jan 2025 - Mar 2025
- Game in **C++** to **simulate** team drafting and weekly matchups with **50+** players over **10** gameweeks.

[Phonebook](#)   Sep 2023 - Nov 2023
- Multi threaded phonebook application in **C** for storing and retrieving **100+** contacts done over **10** weeks.

[Word Gravity](#)   Jan 2022 - May 2022
- Interactive typing game in **JavaScript**, players type letters before they reach the bottom with **100+** unique levels.

Technical Skills

Data Analysis: Hudl, Catapult, Python, Excel, NumPy, Pandas, Matplotlib, Seaborn, ML, RL
General: C, C++, Java, Data Structures & Algorithms, MATLAB, HTML, JavaScript, CSS, Netlify, Astro
Software: Final Cut Pro, Microsoft Visual Studio Code, Jupyter Notebooks, LinkedIn Sales Navigator, Git, GitHub
Miscellaneous: Lead Generation, Building Automation Systems (BAS), LaTeX

References

[Krishna Ramamoorthy](#)
- Position: Assistant Professor of Computer Science and Engineering
- Employer: Santa Clara University
- Context: [Network optimization projects, research, research assistant](#), teaching assistant
- Email: kkattiyanramamoorthy@scu.edu

Jacob Roy
- Position: Assistant Athletics Director, Sports Performance
- Employer: Santa Clara University
- Context: Worked with in creating [Player Performance Outliers](#) and [Matchday](#)
- Email: jroy@scu.edu

[Jerry Smith](#)
- Position: Head Coach
- Employer: Santa Clara Women's Soccer
- Context: Worked with in creating [Hudl Wyscout Match Report Extension](#) and [Matchday](#)
- Email: jsmith@scu.edu

Justin Khoo
- Position: Founder
- Employer: [ProofJump](#)
- Context: Worked for at [ProofJump](#)
- Email: justin.khoo@gmail.com