

# Derek Chui

## Curriculum Vitae

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

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Linkedin: [linkedin.com/in/derek-chui](https://linkedin.com/in/derek-chui) | GitHub: [github.com/derek-chui](https://github.com/derek-chui) | U.S. Citizen

## 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

### matchdays.app

Jan 2026 - Present

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

### Hudl Wyscout Match Report Extension

Jan 2026

- 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 - Jan 2026

- 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.

## Experience

### Undergraduate Assistant

Santa Clara University Broncos, *Oakland Roots*

Sep 2025 - Present

Apprenticeship | Hybrid

- Hudl Wyscout**, **Catapult**, Impct, VALD, [matchdays.app](#), coaching, performance, **automating** data workflows.
- Reports, **500+** **NCAA D1 & USL Athletes**, **100+ metrics**, scouting, **analysis**, **APIs**, **KPIs**, **Python**, pipeline.

### Research Assistant

Apr 2025 - Present

Part-time | Hybrid

Santa Clara University - Wireless Intelligent Networks (WIN) Lab

- Reinforcement Learning (RL)** models for 6G wireless systems, research on NOMA in **IEEE CCNC & WCNC**.
- Analysed 50+** papers, implemented **25+ simulations**, and compiled into over **10** submissions to related venues.

<b>Teaching Assistant</b>	Sep 2025 - Dec 2025
<i>Santa Clara University</i>	<i>Part-time   Hybrid</i>
<ul style="list-style-type: none"> <li>Facilitated lectures, led practicums, and office hours for <b>61</b> students in programming paradigms (CSEN 171).</li> <li>Developed assignments and autograders, <b>database visualizations</b> and <b>analysis</b> reveals increased scores by <b>5%</b>.</li> </ul>	
<b>Sales Development Representative</b>	Jul 2024 - Apr 2025
<i>ProofJump</i>	<i>Part-time   Remote</i>
<ul style="list-style-type: none"> <li>Connected with <b>100+</b> professionals in the <b>SaaS, B2B</b>, and SDR industries through LinkedIn Sales Navigator.</li> <li>Automated <b>100+</b> outreach emails to specific audiences and set up inbound &amp; outbound routines.</li> </ul>	
<b>Training Specialist</b>	Jul 2024 - Nov 2024
<i>Honeywell</i>	<i>Part-time   On-site</i>
<ul style="list-style-type: none"> <li><b>10+</b> training videos on Honeywell XLS fire alarms, planned courses, worked on site at various apartment buildings.</li> <li>Assisted instructors during training with <b>50+</b> students over <b>15</b> weeks, Honeywell Building Automation Systems.</li> </ul>	
<b>Video Editor</b>	Feb 2021 - Jul 2024
<i>Freelance</i>	<i>Remote</i>
<ul style="list-style-type: none"> <li>Managed <b>70</b> video projects over <b>3</b> years for clients with Final Cut Pro under fluid deadlines in an efficient manner.</li> <li>Organized &amp; detail oriented file management for footage, project folders, exports, focused on quality &amp; consistency.</li> </ul>	
<b>Content Creator</b>	Dec 2015 - Feb 2021
<i>Self-Employed</i>	<i>Remote</i>
<ul style="list-style-type: none"> <li><b>170</b> YouTube content over <b>5</b> years on gaming, lifestyle, tech, video essays, montage segments, and more.</li> <li>Hosted a podcast with <b>22</b> discussions and interviews, blogs with <b>30</b> in depth articles, compiled into a short book.</li> </ul>	

## Technical Skills

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**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

## Network Optimization Projects

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### 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

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### 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**
- Submission: [Semantic Utility Aware User Grouping for 6G NOMA Networks](#)
- 2FURS (Faculty-mentored Undergraduate Research) Grant**
- Awarded in undergraduate research funding

Aug 2025

Apr 2025

## Projects

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- 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.

## References

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- 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](mailto:kkattiyanramamoorthy@scu.edu)
- Jacob Roy**
- Position: Assistant Athletics Director, Sports Performance
  - Employer: Santa Clara University
  - Context: Worked with in creating [matchdays.app](#) and [Player Performance Outliers](#)
  - Email: [jroy@scu.edu](mailto:jroy@scu.edu)
- Jerry Smith**
- Position: Head Coach
  - Employer: [Santa Clara Women's Soccer](#)
  - Context: Worked with in creating [matchdays.app](#) and [Hudl Wyscout Match Report Extension](#)
  - Email: [jsmith@scu.edu](mailto:jsmith@scu.edu)
- Ryan Martin**
- Position: Head Coach
  - Employer: [Oakland Roots](#)
  - Context: Worked with in creating [matchdays.app](#)