Thomas Schwarz

thomaspschwarz@outlook.com, github.com/tomiam8 +61 415 839 533

Summary

Driven university student studying physics and computer science.
Experience programming in Python, C and Java, excited to learn new skills.
Strong interpersonal and communication skills from team-work and teaching experience.
Not afraid to dive in the deep end and learn, succeeding through hard work and dedication.

Education

University of Sydney
B. of Science and B. of Advanced Studies (Physics, Computer Science)
Notable results include a WAM of 87, and HD grades in Algorithms and Data Structures (Advanced), Object Orienated Programming, Models of Computation, Linear and Abstract Algebra (Advanced), Discrete Maths (Advanced) and Physics 1A, 1B, 2A & 2B

Barker College High School (2018)
ATAR: 99.20
Received band 6 results in Maths Extension 1 and 2, Physics, Economics and Chemistry.

Work Experience

2021: University tutor for Algorithims and Data Structures
Taught a weekly class for an introductory computer science class covering Algorithim design and efficiency analysis. Involved engaging students, explaining complex topics in understandable ways and guiding students through their learning.

2020: Computer Science research project
Created and tested an algorithm over several weeks to solve a linear-program version of the Online Bidding Problem. Was supervised by Dr Julian Mestre,

2020: Debating adjudication
Adjudicated high school debating competitions. Demonstrated focused critical thinking, balancing fair judgements with positive feedback to help students improve their debating skills

2019-20: Supervised Study Mentoring
Supervised a school's afternoon school studying program as part of a team of tutors, both providing Maths and Physics help to students, and helping students stay focused to study effectively.

Extra-Curricular & Volunteering

2021: USYD Physics society president
Worked with the PhySoc executive team to plan, market and execute events for members. Involved addressing the unique challenges of returning to in-person events, helping rebuild the undergrad physics community and supporting members more generally as a result of Covid-19.

2021: Shuffler for Spotify
Made a web app to create a truly random alternative to Spotify's shuffler. Uses the Spotify API to, for a chosen playlist, create a randomly ordered copy. Is currently online at https://tomiam8.github.io/shuffler-for-spotify/index.html

2020: USYD Computer Science Society Hackathon 2nd Place
Deveoped a web app to make a web app that could send and receive a few bytes of information using the speaker and microphone of a phone, as an alternative to QR codes. Worked specifically on receiving and decoding the noisy data from the microphone.
devpost.com/software/syncs-hack-2020 github.com/mattyhempstead/syncs-hack-2020

2019: Droid Racing Competition
Worked as the programmer in a team of seven people to build an autonomous RC car that could drive itself around a marked indoor track in a timed competition.

2015 – 2017: Programmer on school robotics team
Worked as part of a team delivering critical projects within tight time deadlines, often involving learning new technologies and techniques.
Key projects:

- Java Workshops - developed and taught a programming curriculum to new team members who had no prior programming ability
- Vision targeting - developed a system to track predefined vision targets to allow the robot to aim and shoot at the goal. Included researching and using the OpenCV library, Raspberry Pi system and establishing an on-robot network with little to no prior knowledge of such systems within a 10-week deadline
- Trajectory generator - as part of a team developed a system to generate complex 2D curve-based paths for the robot to traverse accurately and quickly. Further developed a corresponding GUI for the visualization and design of the paths.

Awards

Received the University of Sydney Academic Merit Prize
Received the Premier's Award for All-round excellence in the HSC
High school robotics team received the Innovation in Control Award sponsored by Rockwell Automation in our division at the world championship, for our trajectory generator project.

Notable Academic Results

Introduction to Programming (Advanced)	INFO1910	93
Object-Oriented Programming	INFO1113	94
Systems Programming	COMP2017	91
Data Structures and Algorithms (Advanced)	COMP2823	89
Models of Computation (Advanced)	COMP2922	89
Discrete Mathematics (Advanced)	MATH1904	88
Linear and Abstract Algebra (Advanced)	MATH2922	95