Nick Sullivan

✉ nick.dave.sullivan@gmail.com

🌐 nickdavesullivan.com

○ github.com/Nick-Sullivan

in linkedin.com/in/nick-dave-sullivan

ABOUT ME

Software Engineer, Ph.D. I specialise in back-end software (Python/C#), cloud infrastructure (AWS), and algorithm design. I'm passionate about everything automation, including test automation and data analytics.

I'm an Australian currently looking to immerse myself in the UK.

EMPLOYMENT

2021-Now	**Senior Software Engineer** TIIMELY • Responsible for solution design and delivery of automating home loan lending policies and validation of customer financials. • Balanced immediate business outcomes with a strategic migration from a monolithic architecture to microservices using domain-driven development. • Initiated and led a service redesign resulting in 10x development efficiency. • Introduced integration testing frameworks and processes. • Established development practices to reduce bottlenecks as the company increases headcount. • Upskilled the team in clean code principals through code reviews, pair programming, and whitepapers. • C#, AWS, SQL, Typescript, Playwright
2019-2021	**Software Engineer / Team Lead** MaxMine • Responsible for automating the generation of actionable insights using big data from mining equipment. • Introduced data quality testing and improved processes as the company client list grew from 2 to 8. • Promoted to technical lead in 2021, where I was responsible for management and mentoring a team of 5, including recruitment of new team members. • Balanced feature delivery while migrating analytics from Matlab to Python. • Python, AWS, Terraform, Matlab, dbt
2016-2019	**Contractor** THE UNIVERSITY OF ADELAIDE • Automated a laser guided pacing system for the Australian Olympic track cycling team. • Enabled autonomous operation of small sensor-laden vehicles for defence research. • Tutored fourth year engineering courses Advanced PID Control and Advanced Digital Control. • Python, C++, ROS, Matlab

EDUCATION

2016-2019	**Ph.D. in Robotics** THE UNIVERSITY OF ADELAIDE Researched new methods for task allocation and collaborative localisation for ground vehicles; designing algorithms that decide how individuals should complete their objectives, while remaining within line-of-site of one another. • Presented my research at conferences ACRA 2017, ACRA 2018, and ICARCV 2018, as well as to Australia's Minister for Defence Industry and Chief Defence Scientist. • Published four journal papers to top quartile journals.
2010-2015	**B.Eng. in Mechatronics and Comp Sci (Hons)** THE UNIVERSITY OF ADELAIDE • 6.5/7 GPA.

CERTIFICATIONS

2021   **AWS Certified Solutions Architect - Associate**

OTHER PROJECTS

I create small projects to explore new technologies and try out different architectures. My go-to tools are a combination of Python, Flutter, AWS, Terraform, and GitHub actions. Some notable ones include:

ONLINE GAME

When COVID-19 started causing lockdowns, I converted an in-person game that my friends and I play into a websocket-based interactive website. Over time, this has grown to become an Android app with user authentication, statistics tracking, and a full suite of integration tests applied to a staging server.

ANDROID APP

Generates a custom QR code on top of a GIF, which I use as a fun way to share links. Uses CICD for automated testing and deployment to the Android Play Store.

COMPETITIONS

Winner of a few hackathons, including GovHack, Unearthed Adelaide, and Commonwealth Bank Hackathon. In 2014 I entered the Autonomous Ground Vehicle Challenge, dealing with image processing, localisation, and system integration.

PUBLICATIONS

N. Sullivan, **Task Allocation and Collaborative Localisation in Multi-Robot Systems**, *Ph.D Thesis*, 2019

N. Sullivan, S. Grainger, B. Cazzolato, **Analysis of cooperative localisation performance under varying sensor qualities and communication rates**, *Journal of Robotics and Autonomous Systems*, 2018

N. Sullivan, S. Grainger, B. Cazzolato, **Sequential Single-Item Auction Improvements for Heterogeneous Multi-Robot Routing**, *Journal of Robotics and Autonomous Systems*, 2019

N. Sullivan, S. Grainger, B. Cazzolato, **A dual genetic algorithm for multi-robot routing with network connectivity and energy efficiency**, *International Conference on Control, Automation, Robotics and Vision* (ICARCV 2018)

N. Sullivan, S. Grainger, B. Cazzolato, **Algorithms for Multi-Robot Routing with Adaptive Heterogeneity**, *Journal of Heuristics*, 2018

N. Sullivan, S. Grainger, B. Cazzolato, **Formation-based multi-robot routing with inter-robot distance constraints**, *European Journal of Operational Research*, 2018

N. Sullivan, G. Pearce, S. Grainger, B. Cazzolato, **An outdoor multi-vehicle platform for collaborative localisation research**, *Australasian Conference on Robotics and Autonomation* (ACRA 2018)

N. Sullivan, S. Grainger, B. Cazzolato, **Robot heterogeneous multi-robot routing for low-intelligence agents**, *Australasian Conference on Robotics and Autonomation* (ACRA 2017)