

# Andrew Haigh

hello@nelf.in Sydney, Australia

I am a software developer with a passion for excellence tempered by a pragmatic attitude to getting things done. A strong generalist, I am variously experienced in web, distributed systems, low-latency networking, and lightweight GUI programming. Since 2014, I have been based out of Sydney, Australia. Between the years of 2008 and 2013, I have also formerly worked as a technical instructor, a research assistant, a multimedia technician, a developer (twice), an IT assistant/network technician, and a field assistant. I've taken side-gigs and short-term contracts in areas such as full-stack website design and interactive installations. I've spoken at trade shows, I've been an industry mentor for high-school-age STEM students for two separate companies, I've taken scholarships on research projects involving topics like Android Linux kernel development for app permissions enforcement and automated narrative plot generation with character intentionality. I maintain open-source software and I contribute to open-source projects.

## Experience

Senior Research Officer <i>Apr. 2018–present</i> UNSW Art & Design	Realising the vision of the National Facility for Human-Robot Interaction Research, a multi-institutional purpose-built research and testing facility for enabling the study of how people interact with technology and robots. Working largely in an independent capacity my involvements have been varied, including, but not limited to: writing and integrating custom software, assembling and testing hardware, administering servers, giving talks to classrooms and visitors, and liaising with clients to figure out how we can best support their requirements.
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A diverse array of custom software build and integration, including data acquisition from various cameras, lidars, and microphones; as well as real-time analysis, detection, and classification for features such as person and object detection, tracking, face key-points, human pose and gesture, and remote physiological monitoring. All of the above covered by a unified ROS interface for easy integration with robotic platforms.



Backend Developer <i>Nov. 2016–Jun. 2017</i> Hopfit	Nights and weekends at a Sydney-based startup for helping gyms manage class attendance and gymgoers managing memberships and personal training sessions. Writing Python AWS Lambda functions and a Postgres+PostGIS data store.
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Developer <i>Jan. 2016–Mar. 2018</i> Optiver	Worked on low-latency trading applications and market connectivity software for the Tokyo Stock Exchange team. Developed a simulated exchange in Python based on specification documents. Built a high-performance long-running C++ application to monitor all outgoing and incoming messages from exchange-facing software to measure timings and other analytics which were forwarded into a downstream system responsiveness pipeline.
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From the start of 2017 through 2018 I worked with the Middle Office development team developing applications to support daily reconciliation and accounting reports. Saw through the release of the MARS accounting and reconciliation tool to production; and oversaw the technical aspects of its integration into the existing processes of the Taiwan office, regularly co-ordinating with remote stakeholders and advocating on their behalf while balancing the needs of existing production users. Trained in the basics of FPGA development and digital circuit design.

Software Engineer	Diagnosed and patched bugs in legacy financial PHP code; also integrated existing back-
<i>Jul. 2014–Dec. 2015</i>	end with new payment gateways. Joined a tight team developing a PCI-compliant pay-
Freelancer.com	ment service provider and built Python modules as part of back-end services and front-
	end JavaScript within a test-driven development process. Wrote new extensions to the
	Jenkins job DSL to encapsulate internal engineering workflows for continuous integra-
	tion. Reviewed and authored changes to configuration managed by Puppet. Interviewed
	potential candidates for engineering positions in the Sydney offices.
	Later, architected and implemented services supporting the Escrow.com website and
	accounting stack following the acquisition of Escrow by Freelancer, including designing
	the platform architecture in AWS and database schemata. Continued as lead maintainer
	of two production services: the Python credit card payment processor and Go file upload
	service.

## Education

<i>Feb. 2010–Jul. 2014</i>	Bachelor of Computer Science (Honours)
Canberra, ACT, Australia	Australian National University
<i>2003–2008</i>	Higher School Certificate
Wentworth Falls, NSW,	Blue Mountains Grammar School
Australia	

## Skills

Systems	Debian, CentOS, Windows, Windows Server
Languages	Python, C++, C#, JavaScript, PHP, SQL, bash, Go, Rust, C, Java, R, Perl

Referees can be provided upon request.