



Noon van der Silk

"I'm interested in learning new and interesting things, as well as helping people learn more, be happy and enjoy their lives."

Education

- 2013–Current **Masters of Mathematics and Statistics**, *The University of Melbourne*.
Thesis: Minimal resource topological quantum computation
Supervised by: Austin Fowler and Jan de Gier
- 2010–2012 **Bachelor of Science (Physics)**, *RMIT*.
Specialising in Physics and Mathematics
Received Information Security-Informatics (ISI) Research Scholarship, for work on Cayley graphs.
- 2001–2003 **Advanced Diploma of Information Technology**, *RMIT*.

Selected Work Experience

- 2016–Current **Machine Learning Engineer**, *Silverpond*, Melbourne.
Languages: Python, Haskell.
- Written, organised and run training courses on deep learning fundamentals
 - Open-source deep learning model development in Python
 - Open-source development on the TensorFlow Haskell library
 - Organised community events
 - General deep learning consulting/model development

- 2011–2016 **Software Engineer**, *Biarr Networks*, Melbourne.
Languages: Python, C++, F#, C#, Haskell, as well as Web (JavaScript, HTML, CSS, etc).
Technology: AWS, Docker, Linux, Windows, Jenkins, Git, Mercurial, Postgres, GIS tools, and much more.
- Delivered software to clients to support the planning and construction of fiber optic networks
 - Developed design software for specific clients in Python
 - Wrote dashboard tool in Haskell
 - Designed WPF/C# local application to aid planning
 - Prototyped new functionality in Haskell
 - Established development workflows, CI-builds, task management, build systems, newsletter of activities, and knowledge-sharing
 - Organised charitable outreach projects for entire staff
 - General feature development/bug fixes
 - Been with the company during significant growth
- 2012–2013 **Research Assistant**, *The University of Melbourne*, Melbourne.
 I worked with Austin Fowler (group website: <http://www.topqec.com.au>) on topological quantum computing and quantum error correction. This work transitioned into my Masters Thesis.
- 2007–2010 **Senior Software Engineer**, *Cosmos 21+ Group*, Melbourne.
Languages: C#, as well as Web.
- Led 2-year development of world-wide mobile food ordering platform
 - Worked in a team of 3, mentored junior staff
- 2006–2007 **Senior Software Engineer**, *AT2*, Melbourne.
Languages: C#, ASP.NET, as well as Web.
- Development of core features for a talent management website
 - Reported to CEO/CIO
 - Converted codebase from ASP.NET 1.1 to 2.0
- 2002–2005 **Software Engineer**, *Portland House Group*, Melbourne.
Languages: C#, ASP.NET, Classic ASP, as well as Web.
- Feature development on internal funds management platform
 - Development of SMS notification of stock changes directly against telco infrastructure
 - Implemented analytical tools for investment scenarios (IRR, Imputation credit calculator)
 - Development of double-entry general ledger tool for managing account transactions
 - Developed internal tool to manage all outgoing payments, utilising encryption and hashing methods, as well as accompanying security analysis
 - Integrated trade execution with several brokerage firms

Selected Open Source Contributions

- 2016 **DeepScite**, *Author*, <https://github.com/silky/deep-scite>.
 A simple implementation of a recommendation system using techniques from deep learning. Done in TensorFlow for Python.
- 2013–Current **SciRate**, *Contributor/Moderator*, <https://scirate.com/>.
 Contributed MathJax code to support rendering of math in abstracts. In 2015 I became a moderator, after active participation in planning strategy for the site.

- 2012–Current **MathSwap**, *Founder*, <https://mathswap.herokuapp.com/>.
A website to share snippets of maths, rendered with MathJax. Originally developed in C# and hosted privately on an AWS server, I ported it to Python+Django so it could be hosted freely on Heroku.
- 2015 **haskmas**, *Author*, <https://github.com/silky/haskmas>.
A 3D-printable Christmas tree decoration inspired by Haskell. The decoration is generated by Haskell code, using the ImplicitCAD library.
- 2015 **pipes-websockets**, *Author*, Hackage, <https://github.com/silky/pipes-websockets>.
Library to bring the Haskell websockets library into the "pipes" framework.
- 2015 **Super Reference**, *Author*, <https://github.com/silky/super-reference>.
Haskell-based website, intended to run locally, that displays BibTeX files and lets you open the PDFs that are associated with the papers.
- 2015 **yesod-auth-oauth2**, *Contributor*, <https://github.com/thoughtbot/yesod-auth-oauth2>.
Contributed bug fixes and new features.
- 2015 **ImplicitCAD**, *Contributor*, <https://github.com/colah/ImplicitCAD>.
Fixed bugs and added functionality.
- 2014 **clone-all, infer-upstream**, *Author*, <https://github.com/silky/<lib-name>>.
Small Haskell executables to perform actions against the GitHub API.

Community Involvement

- 2016 **Machine Learning and Artificial Intelligence Meetup**, *Co-Organised*, <https://www.meetup.com/Machine-Learning-AI-Meetup/>.
Organiser of regular hack nights; held a few community events, such as "An Evening of Deep Learning".
- 2016 **Techfugees**, *Participant*, <http://techfugees.com>.
I worked as part of a team of 8 in building a proof of concept website whose aim was to connect new refugees with skills to people that can introduce them to the working culture in Australia. The website was done rapidly in the Haskell framework Yesod.
- 2015–Current **BAM**, *Co-Organiser*, <http://bamconf.com.au/>.
The "Biarri Applied Maths Conference" is an annual conference that I have helped organise for the past 2 years. Duties include: Coordinating the venue and speakers, setting the agenda for the conference, and general admin.
- 2014 **Open Science Workshop**, *Founder*, <http://openscienceworkshops.github.io/>.
A workshop where researchers from various fields were brought together and shown how to use GitHub, and the Sage Math Cloud to do science "collaboratively". I organised funding, speakers, venue, helpers, food, and the agenda for the day.
- 2012–2016 **Melbourne Maths and Science Meetup**, *Founder*.
A meetup where I invite researchers to give a 20 minute talk on their specialisation to a general audience.
- 2011–2015 **Quantum Lunch Melbourne**, *Founder*.
A reading group on quantum computing where we discussed papers weekly.
- 2005–2007 **OWASP Melbourne**, *Invited Founder*.
An organised group, hosted at Deloitte, where we had talks on web security. I was invited to start the Melbourne chapter due to my participation on various security mailing lists.

2001–Current **Security mailing lists.**

I'm a member of over 40 security mailing lists, and maintain a cursory view of the latest happenings, vulnerability announcements, new hash/encryption functions and contests.

2003–Current **Talks.**

Over the years I have given talks on: C#, Haskell, Python, Web Application Security, Cryptography, Hashing, Quantum computing, Quantum complexity theory, and Open science. Some of these talks can be found on GitHub.

Interests

- Machine Learning
- Quantum computing
- Comedy (Improv & otherwise)
- Cryptography
- Interactive learning environments
- Fashion
- Architecture
- Vim
- Category theory
- Physics