

Taliesin Beynon

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- EDUCATION** *Honors, Pure Mathematics, University of Cape Town,* 2008
Bachelor of Science, Physics & Mathematics, University of Cape Town 2007
- EXPERIENCE** *Lead Developer, Deep Learning* Dec 2015 — present
Advanced Research Group, Wolfram Research, LLC
- lead design and implementation of Mathematica's built-in deep learning library
 - high-level features like dynamic dimension support via automatic bucketing
 - upstream contributions to Amazon's MXNet deep learning backend
 - creation and review of over 50 pages of [reference material](#), examples, and [tutorials](#)
 - co-wrote blog posts for [O'Reilly](#) and [Wolfram](#)
 - mentoring of other developers to make contributions to the framework
- Manager and Development Lead* Mar 2013 — Dec 2015
Advanced Research Group, Wolfram Research, LLC
- design and implementation of [textual search](#) and [cryptography](#) functionality for Mathematica
 - design and supervision of [CloudExpression](#) functional hierarchical database service
 - type inference, query compilation and formatting for hierarchical data container ([Dataset](#))
 - helped design machine learning functionality ([Classify](#), [Predict](#))
 - led design and implementation of string, file and XML templating [frameworks](#)
 - helped design of [Association](#) and related functionality
 - led data analysis of the data resulting from our [Facebook analysis project](#), which made international news in outlets like the BBC, the New York Times, and [Wired Magazine](#)
 - supervised 6 software engineers, mentored several junior software engineers
- Manager and Development Lead* Mar 2012 — Mar 2013
Applied Research Group, Wolfram|Alpha, LLC
- directed the development of Wolfram|Alpha's [Personal Analytics for Facebook product](#)
 - designed, built, and documented caching and logging frameworks for use in Wolfram|Alpha
 - supervised 4 software engineers
 - acted as mentor for several Wolfram Summer School students
- Research Programmer* Apr 2011 — Mar 2012
Applied Research Group, Wolfram|Alpha, LLC
- developed headline features of Wolfram|Alpha Pro automatic [data and image analysis](#)
 - supervised 6 other developers to achieve shipping deadline
 - worked on internal database and natural language processing tools
 - acted as mentor for several Wolfram Summer School students
- Research Programmer* Jan 2010 — Apr 2011
Special Projects, Wolfram|Alpha, LLC
- implemented Turing machine [functionality](#) in Wolfram|Alpha
 - developed widely-used internal parsing and visualization tools
 - developed NLP routines for entity extraction for Wikipedia
- Research Software Engineer* Jul 2009 — Dec 2009
Ndibano
- implemented Kalman filter for people-tracking computer vision application for bank branch and commercial space monitoring

Software Engineer Jan 2009 — Jun 2009
Nimbula (acquired by Oracle in 2013)

- worked on virtualization "cloud operating system" product
- wrote workflow tools for other developers
- reverse-engineered the NoMachine VDP client to incorporate it into our product
- implemented GUI for the product using Python and Qt

Engineering Intern Nov 2008
Center for High Performance Computing

- compiled and ran codes on an IBM BlueGene/P supercomputer
- tested scaling of various codes against the number of nodes

Engineering Intern Nov 2007 — Jan 2008
iThemba Laboratory for Accelerator Based Sciences

- designed and implemented GUI to program FPGA-based particle detection trigger circuits
- designed GUI with wxPython frontend and Python-based VHDL code generation backend
- gained practical experience with programming FPGA firmware and general electronic skills

Independent Contractor Feb - May, Dec 2002
LarahCourseWare

- constructed Tk-based user interface in Perl to allow batch execution RTF-to-HTML jobs
- wrote the Perl RTF-to-HTML engine that powered LarahCourseWare's e-learning business
- acquired my first work experience at 14 years of age

PATENTS Co-inventor with Stephen Wolfram on 4 USPTO patents (1 granted, 3 provisional).

OPEN SOURCE **MXNet**: added features needed for fast bucketing
Rust: improved documentation
codesearch: added fixes for handling Mathematica notebooks
goreplace: added various usability features
sgt: Mathematica environment for doing experiments with spatial game theory
wikispider: go tool for parallel bread-first scraping of Wikipedia pages
floatworld: C++ multi-agent evolutionary simulation employing RNNs
penguin: multi-platform GUI library, my first teenage C++ project

SKILLS Languages (intermediate): Javascript, Rust, Julia
Languages (proficient): C, C++, Python, Wolfram Language, Go
Environments: comfortable with Linux, OS X, Windows; reasonable knowledge of Unix principles, administration and tools (ssh, dd, netcat, find, grep, etc.)
Technical speaking, marketing presentations, community participation

ONLINE PRESENCE Github: <https://github.com/taliesinb>
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Hacker News: <https://news.ycombinator.com/user?id=taliesinb>
Mathematica Stack Exchange: <http://mathematica.stackexchange.com/users/7140/taliesin-beynon>