David Barrell

Machine Learning & Software Engineer

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about

I am passionate about finding novel solutions to new problems, particularly in the sphere of computer science and software engineering. I enjoy experimenting with the constant stream of new tools, and am always looking to expand my skill base.

The pursuit of varied projects and opportunities has allowed me to build experience in a range of fields, from cluster computing and cloud deployments to web and mobile application design and development; each new project is a chance for me to try out new technologies, languages and tools. I am particularly interested in machine learning and artificial intelligence.

Outside of work, I spend my time in the theatre, behind a music stand, or on the hockey field.

experience

Culture Amp
June 2018 - Present
Melbourne, Australia

Machine Learning Engineer

Working on the Collective Intelligence team to draw insights out of the results of our customer's surveys, to help those customers collect, share and act on employee feedback.

Responsible for deploying theoretical algorithms and frameworks developed by Data Scientists into production-quality and operational code, and for designing and delivering machine learning components of our product.

Health and Biomedical Informatics Centre R2, The University of Melbourne
July 2015 - May 2018
Melbourne, Australia

Software Developer

Ongoing development of GRHANITE medical data extraction system, enabling collection of anonymised data from clinics, pathology labs and hospitals.

Undertook major rewrite of client-side codebase in C#, released interfaces for new clinical management systems in SQL, developed custom technical support tools.

Oversaw Git usage and created organisation's build servers and processes.

Capgemini
Jan 2018
Melbourne, Australia

Senior Consultant (Contractor)

Contracted to provide advice and assistance in effectively deploying a Python application to Heroku and AWS.

Teenyco
July 2016 - February 2017
Melbourne, Australia

Co-Founder & CTO

Aimed to improve ultrasound diagnostics for use during pregnancies, as well as foster an increased connection between parent and unborn child. Investigated use of machine learning with anonymised ultrasound data to train detection of possible abnormalities, aiming to reduce the high number that go undetected. Developed technique to 3D print tangible models by extrapolating meshes from 2D ultrasound images.

Awarded CMB Capital $10k award for Best Startup at the Wade Institute in 2016.

The Baby Club
October 2016 - March 2017
Melbourne, Australia

Software Developer

Developed eCommerce website and back-end in Django, with a focus on Stripe API integration, handling single payments, as well as a custom lay-by implementation.

TuteMe
January 2016 - December 2016
Melbourne, Australia

Co-Founder & CTO

Developed a mobile tutoring marketplace, connecting university tutors with students in a scaleable and low-maintenance way. Designed and created Android and iOS apps allowing users to organise tutorials, including posting, bidding, reviewing and payments (using the Stripe API). Managed stakeholders and business partnerships, along with branding and marketing campaigns.

Ormond College
Jan 2015 - Dec 2015
Melbourne, Australia

Software / Web Developer

Developed internal Wordpress-based portal for 600+ staff and students, including custom plugins to integrate with College's existing systems. Published iOS and Android apps providing a mobile experience for the portal, built on PhoneGap.

technical skills

Languages

Java, Python, C#, Javascript, SQL, C, CSS, PHP, Haskell, Prolog, Elixir

Other

Event Sourcing, Microservices, Flask, Django, NodeJS, ASP.NET, AngularJS, MSSQL, MySQL, MongoDB, CouchDB, RoboVM, Git, SLURM, IntelliJ IDEA, AWS, Docker, Sketch, Stripe

projects

CommunityAid   National Finalist in Microsoft Imagine Cup

Django-based web application designed to assist communities to help themselves in disaster situations. Allows users to quickly understand their immediate situation, and respond to events during and after an emergency. Utilised Twilio for alerts, and Azure for deployment.

OnTask   Django and Ionic Mobile App

Lead Developer for team of five, creating a gamified job sharing app for client. Allows users to post tasks, apply and bid for tasks, and rate each other on task completion. Masters Software Project at The University of Melbourne.

Non-English Tweet Sentiment Analysis   Cluster/Cloud Computing

Produced a report examining the sentiment, and other data, of non-English tweets in Australia. These tweets were harvested and stored in CouchDB, which was then used to analyse the data. Visualised on a simple front-end, utilising MapBox and D3.js. Included fully automated deployment to OpenStack, using Boto and Ansible.

SliderAI   AI Computer Player

Developed a game-playing AI for the game 'Slider' in Java. Utilising a alpha-beta pruning strategy and an implementation of the TDLeaf machine learning algorithm to improve performance over time.

leadership

Chair   Ormond College Middle Common Room

Elected executive of the graduate student body at Ormond College. Along with a team of 5, I represented the interests and welfare of 100 postgraduate students, and was responsible for managing a $50,000 budget, contributing to college-wide operations, and advising on decisions and strategy affecting community and long-term culture.

Mentor   SuperHack 2017

Mentored a team of high school students in a hackathon aimed at providing young girls with exposure to engineering careers. Created an IoT pill dispenser designed to improve adherence to drug regimens, placing second in the competition.

Musical Director / Technical Director   Various theatre companies

In these positions, I have worked with the cast and crew of over a dozen productions, developing my leadership and interpersonal skills, as well as my ability to navigate complex issues in a team. The diverse interests and individuals involved in artistic teams often create difficult scenarios, which require careful leadership and creative solutions. I have found the skills these experiences have given me complement my technical leadership well.

education

2016 - Present

Master of Engineering (Software)

First Class Honours average

The University of Melbourne

2012 - 2015

Bachelor of Science (Elec. Systems)

The University of Melbourne

2012 - 2015

Diploma in Music (Practical)

The University of Melbourne

2011

VCE, ATAR: 96.75

Scotch College, Melbourne

references

Prof Rufus Black

Vice Chancellor

University of Tasmania

rufus.black@utas.edu.au

Dr Deborah Hull

Executive Officer

History Teachers' Association of Victoria

d.hull@htav.asn.au

Contact numbers available on request

More information, including other projects and full work history, can be found at www.davidbarrell.me.