

Paul Gradie, MSc, PhD

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Summary

I am a Software engineer / Communicator / Educator / Scientist / Problem Solver / Team Player / Father who enjoys pair programming, learning, and building things well. I have a diverse background that intersects with Software Engineering, Biology, Bioinformatics, Machine Learning (including Deep Learning), and Natural Language Processing. I am often told that I am personable, approachable, and enjoyable to work with.

Education

Ph.D. - University of Melbourne, AUS	2014 - 2017
Developmental Genetics	
MSc - University of Connecticut, USA	2010 - 2013
Genetics, Genomics, and Bioinformatics	
BSc - University of Connecticut, USA	2007 - 2010
Molecular and Cell Biology	

Experience

Tilt (Formerly Empower) 2024 - Present

Staff Software Engineer - Platform Team Lead

Tech: C#/.NET, React, Powershell, Azure

Leads a team of highly skilled Platform Engineers to

- Deliver on strategic and tactical initiatives that improve general system stability and resilience
- Improve product velocity by abstracting platform level complexity from product level teams

Leads culture by exemplifying

- General problem-solver behavior and mindset
- Strong ownership standards through driving outcomes, taking responsibility for delivering through to production, and practicing excellent planning, coordination, and execution

Delivers on a diverse range of high impact and high risk projects

- Planned and managed the execution of migrating of 10 million push notification registrations to a new future-proof hub integration design
- Planned and lead the business critical cutover of the core ACH money movement provider API to a new version responsible for moving billions of dollars per year
- Designed and implemented a world-class delivery system model responsible

Tech Experience

Languages

C#
Typescript
Python
SQL
Bash
Powershell

Technologies

.NET
AI
Kubernetes
Blazor
React
Redux
Nextjs
TensorFlow
Pandas
Scikit-Learn
Matplotlib

Cloud

AWS & Azure

Work Style Preferences

Team driven problem solving

Pair programming, human and AI

Learning through doing, asking questions, making mistakes, and receiving feedback

Key Personal Strengths

Interpersonal skills
Tenacity
Fast learner

Personal Interests

My brain is one that enjoys



for delivering core products

- Redesigned and reset the culture for incident response, training the organization in higher incident response standards through a simpler and more effective model

creating music:

soundcloud.com/paulgradie

Octopus Deploy 2020 - 2024

Senior Software Engineer

Tech: C#/.NET, React + Typescript, Powershell, AWS & Azure

Designed and Delivered an API performance tracking system

- Delivered a system that creates, tracks, and analyzes performance benchmarks using cloud infrastructure and a benchmarking library I maintain
- Applied statistics and machine learning to predict scalability
- Delivered performance optimizations to Octopus Server using the system to provide regression protection

Lead focused improvements to the reliability of the CI delivery pipeline

- Coordinated a multi-team collaboration with senior, lead, and principle engineers to stabilize and optimize the CI pipeline
- Achieved a 12x improvement in delivery pipeline stability
- Fostered the team's expertise in CI pipeline maintenance and reliability

Delivered features and UI/UX improvements to Octopus Deploy

- Delivered customer facing UI features and backend server components
- Contributed to the implementation of a custom message bus system enabling multi-node functionality of the Octopus Server
- Delivered principled code refactors to reduce technical debt in both server and web portal
- Introduced and built new tools to identify performance regressions and used these to identify and resolve pain points in the product

Zendesk 2017 - 2020

(Junior) Software Engineer in Data Science

Tech: Python, Scala, Jupyter, bash

Developed and applied high throughput data pipelines to support deep learning research and product development

- Pipelines processed billions of words from customer support data
- Built with Python (Pandas, Pakkr, pySpark), and Scala (Spark, AWS Batch)

Developed and productionized deep learning models that powered enquiry / help article matching ([Answer Bot](#))

- Researched and delivered models that enabled multilingual support
- Submitted a patent for a deep learning based productionizable data filtering system
- Collaborated with other engineers to deliver and monitor models in production, as well as maintain and improve model serving infrastructure

Delivered approaches to clustering customer support ticket domains to expose gaps in support article coverage ([Content Cues](#))

- Researched and delivered:
 - ML approaches to clustering customer support data at scale



- ML approaches to summarizing cluster content
- customer facing data visualization prototypes

Non-Trivial Open Source Projects

Sailfish

Designed and built the Sailfish performance benchmarking library

- Used by [Octopus Deploy](#)
- C#
- Used prompt engineering to peer (this predates the concept of vibe coding) with ChatGPT to design and create the test adapter integration

Palavyr.com

Designed and built Palavyr, a chatbot configuration and customer engagement service

- UI: Typescript/React/Custom Webpack configuration
- Back-end: ASP.NET/C# and EF Core + postgres
- CI/CD: Github Actions, TeamCity, and Octopus Deploy
- Infrastructure: AWS (S3, SES, EC2, Lambda, Amplify, RDS, & more)

Worked with customers to prioritize feature development, fix issues, and identify new features to implement

Open Source components

- [Palavyr Chat Widget](#)

Pubs, Patents & Presos

Patents

- Semi-Supervised, Deep-learning approach for removing irrelevant sentences from text in a customer-support system, US 11397952 B2, 2022-07-26

In print

- Gradie, Paul. Defining the Master Regulator of Urethral Closure in Mouse. 2017. University of Melbourne, [Doctoral dissertation](#).
- T. Phillips, D. Wright, P. E. Gradie, L. Johnston, A. J. Pask. (2015) A Comprehensive Atlas of the Adult Mouse Penis. Sexual Development. Sex Dev 2015;9:162–172. DOI: 10.1159/000431010
- Galla, S. J., Viers, B. L., Gradie, P, de Saar. (2009). Morus murrayana (moraceae): A new mulberry from Eastern North America. Phytologia

In Submission

- P. E. Gradie, P. Bernard, D. Mattiske, R. R. Behringer, P. Overbeek, A. J. Pask, A novel long non-coding RNA Leat1 is a master regulator of urethral closure.

Interesting Posts

- [Generic Abstractions in ASP.NET core using MediatR](#)
- [Iterations on the Palavyr API - Part 1: The three phases of the Palavyr API surface](#)



- [*Iterations on the Palavyr API - Part 2: Palavyr Persistence Abstractions*](#)
- [*Iterations on the Palavyr API - Part 3: Applying SOLID for a lean file management abstraction*](#)
- [*To use Autowired properties or not - that is the question*](#)
- [*Making the most of Answer Bot: topic group visualization using t-SNE*](#)
- [*The Science Behind Consolidating Answer Bot - Part 1*](#)
- [*The Science Behind Consolidating Answer Bot - Part 2*](#)

Talks and Workshops

- Understanding dynamic dispatch in .NET (Octopus Deploy - internal)
- Applying Monte Carlo simulation to model build instability and strategically fix it (Octopus Deploy - internal)
- An Inside look at Answer Bot - 2018, updated 2019 - Melbourne, Copenhagen (Zendesk - external)
- A survey of Machine Learning at Zendesk - 2018 - Copenhagen (Zendesk - external)
- The creation of an ML Product - 2019 - Copenhagen (Zendesk - external)
- Understanding and building Neural Network from scratch - 2019 - Melbourne (Zendesk - internal)

Work Rights Disclosure

I am a dual US and Australian citizen currently living in Australia.

