

# DANIEL MORRIS

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[Microsoft Research Profile](#) | [LinkedIn Profile](#)

## SUMMARY

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Software Engineer with considerable experience in navigating the domains of research and engineering. Taking cutting-edge research, getting stakeholder buy-in, and producing a production-ready product. Having worked across large-scale distributed systems, data analytics and AI research, I have developed the ability to effectively communicate and synthesise complex technical ideas to a broad audience.

My experience also includes the creation and generation of disruptive technologies striving to solve real-world problems related to matters such as healthcare and education. One project helped approximately three million residents of Washington state to get vaccinated during the covid pandemic. As a result of my employment history and personal projects, I am comfortable working with a broad range of technologies and within environments that require creativity and nurturing relationships. I seek to join an organisation which values originality, innovation, and strives to have a meaningful impact.

## EMPLOYMENT HISTORY

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### **Research | (AI), USA | Software Engineer II | Program Synthesis Research & Engineering**

May 2020 – Current

- Selected to assess the capacity and ability of OpenAI's GPT-3, Codex and ChatGPT. Developed benchmarks and evaluation techniques, appropriate domains of application and future areas of research. Our experience developing Excel's "Flash Fill" was utilised as a benchmark of comparison.
- Maintained and strengthened relationships with OpenAI partners, sharing feedback which contributed to subsequent generations of Large Language Model (LLM) development.
- Prototyped several early-stage LLM-based developer tools in VSCode with a reciprocal research relationship with GitHub Copilot.
- Created and deployed a VSCode extension to extract key developer information to power a "repeated-edits" framework for code repair, which was deployed in universities across three countries.
- Built a containerised web application named "AITutor" to combine code repair technology, execution infrastructure, and real-time hints to scaffold learning in University of Michigan Online Data Science Class [1]. AITutor won Microsoft's internal Codex (LLM) challenge and VC funding out of thousands of submissions across the company.
- Created three new Data Extraction experiences utilising the team's Program Synthesis SDK into Microsoft PowerQuery Desktop (.Net) and Web (ReactJS). These experiences are utilised by approximately 100,000 users daily. [2],[3],[4]
- One of the early adopters of "Prompt Engineering" within Microsoft. Utilised in the domain of Regular Expressions and published in OOPSLA 2021 [5]



### **Norway | Software Engineer II | People Intelligence**

September 2019 – May 2020

- On account of winning Microsoft's Annual Hackathon, my proposal "remote collaboration: working hours detection" was funded as a feature team to develop a production grade product. I was a founding member of the team and responsible for ensuring deadlines were met and team cohesion upheld.
- Performed full-stack development from modelling and architecture to schema and API design across both Azure and Substrate.

- Developed and managed a REST API serving profile and image data to over 1.1 billion monthly active users with 215,000rps and distributed across over 100,000 servers.
- Built a GDPR-compliant monitoring infrastructure to assist the profile and image service.
- Architected and implemented a data analytics pipeline to provide insights on the customer usage of the REST API, processing up to 200 TB of data daily.

## TECHNICAL SKILLS

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Proficient	Familiar	Exposure
C#, ASP.Net, Docker, Azure (Web apps, functions, container orchestration), AWS, Python, Gunicorn, Django, Flask, Selenium	Typescript, ReactJs, NodeJs, HTML, CSS, Javascript	Java, C, C++, Apache Spark, GoLang

## NOTABLE PROJECTS

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### CovidWA.com: Co-Founder

A network of over 1000 online scrapers providing near real-time information on covid vaccine appointment availability on all sites across Washington state. Within six weeks of conception over one million people used the site.

Project recognition: 🏆 Winner: GeekWire's "[Geeks Who Give Back](#)" Award and Personal letter of thanks from Governor. J. Inslee and Department of Health. – [More Information](#)

### AI for Programming Education "AI Tutor"

A personalized AI tutor with the potential to adapt to each student's level of knowledge, speed of learning, and desired goals. The AITutor provides students with hints and scaffolds their learning to assist them in completing assignments.

Project recognition: 🏆 Winner: Microsoft CTO Codex Challenge, 2021

### Remote Collaboration: Active-Working Hours

To promote more effective remote work, this project developed an auto-detection for people's most active working time segment utilising telemetry from several Microsoft products.

Project Recognition: 🏆 Winner: Microsoft E+D Annual Hackathon, 2019

### Norwegian Red-Cross Community-Based Surveillance

In collaboration with Norwegian Red Cross, this project aimed to reduce the manual labour and delay time involved in collating, predicting, and responding to outbreaks of infectious diseases in third world countries.

Project Recognition: 🏆 Winner: Microsoft Spring FixHackLearn, 2019 - <https://cbsrc.org/#>

## EDUCATION & PAPERS

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University of Surrey, Surrey, UK

BSc Computer Science – First Class Honours (1:1) – Valedictorian, Class of 2017

Academic Papers:

- Novices Learners' Pain Points in Data Science Programming: Towards Improved Pedagogy and Automatic Feedback Tools (Under review at CHI 2023)
- Multi-modal program inference: a marriage of pre-trained language models and component-based synthesis: [\[7\]](#)
- On Making Sense of Neural Networks in Road Analysis': 🏆 Winner: Sean Morley Memorial UK Government Award 2018 [\[8\]](#)