Josh Stein

Email: josh.e.stein@gmail.com
GitHub: @joshestein
Website: https://joshstein.io/

About

A dedicated software engineer with an MSc in biomedical computing. I'm interested in artificial intelligence, interpretability, alignment, biomedical computing, teaching and magic. I'm a curious and driven person who enjoys being immersed in difficult problems. I bring a strong combination of theory and practical experience to any team. When I'm not working/teaching I enjoy reading, swimming, surfing and hiking.

Education

Technical University of Munich Oct. 2020 – Oct. 2023
MSc in Biomedical Computing - my final thesis was focused on cardiac MRI segmentation and achieved publications in MICCAI and BVM.

University of Cape Town Jan. 2016 – Nov. 2019
BSc in Electrical and Computer Engineering

University of Cape Town Jan. 2014 - Nov. 2015
MBChB in Medicine

Work experience

Private contractor Dec. 2024 - Present
I have worked in several different capacities as a private contractor, mostly in AI and AI-safety related work.

Software Engineer - Mathigon/Amplify Education Mar. 2021 - Present
Mathigon (acquired by Amplify Education) is an ed-tech startup dedicated to making maths more interactive, playful and fun.
My work has focused on building interactive tools for the Polypad, an interactive whiteboard used by ≈ 500k users a month.

I have thoroughly enjoyed my work, and being able to contribute to values I align with so strongly. Mathigon is making a significant impact on the landscape of digital education, shaping the way teachers can make maths more fun and engaging. My biggest contribution has been to implement the real-time collaboration system.

Recurse Center Mar. 2024 - Jul. 2024

I spent 3 months at the Recurse Center, a self-directed learning program designed to encourage programmers to follow their curiosity and work at their limits. I worked on several interesting projects, including hacking a rotary phone, AI sign-language detection, AI safety, and various smaller projects.

Software Engineer - Avelios Medical GmbH Oct. 2022 - Jan. 2023

Avelios is working towards replacing outdated hospital infrastructure with modern, modular software. I firmly believe in the vision of making hospitals more efficient and helping build software that allows physicians to focus on the patient experience, rather than data entry.

Teacher - College of Magic Jan. 2015 - Sept. 2020

Volunteer teacher of magic, illusions, performance theory and showmanship.
I have taught students aged 9-17. Finding myself in multiple positions of mentorship, I have tried my best to nurture and guide students, cultivating their love for magic and their skills as performers.
Responsibilities have included managing multiple curricula, creating and running lessons, training students, assisting teachers, performing magic and managing events.

Software Engineer - Agrigate One Mar. 2020 - Sept. 2020

I gained extensive experience working with a small team contributing to a platform dedicated to aggregating and interpreting all data points across the fresh produce supply chain.
Working in a small team was fulfilling, and allowed me to make significant contributions to improve the platform and user experience. I enjoyed being given autonomy in my work and working closely with more experienced developers.
Specific technologies used: Ruby on Rails, Angular, Heroku, Postgres and GitLab.

Software Engineer Intern - Amazon Web Services Nov. 2019 - Feb. 2020

3 month internship working on back-end support. I chose to work primarily in Python, although I was exposed to some Ruby and Java. I gained familiarity and competence with many native AWS services, including Lambda, Step functions, CloudWatch, API Gateway, etc.

Software Engineer Intern - Superbalist Jun. 2018 - Jul. 2020

Interned for 4 weeks, working with the Growth team. We were responsible for attracting new customers to the platform and achieving higher conversion rates of existing customers. I worked on an internal web app that allowed for hyper-targeting of users. Worked on front-end and back-end aspects of the project, using a combination of Python (Django), HTML, Javascript and Zephyr.

Tutor Jan. 2014 - Jan. 2017

I started Eureka Tutors, a private company aimed at providing top-quality tutors to students in need. I have tutored maths, physical sciences, life sciences, information technology and computer science to learners from Grade 8 to 1st year university.

Publications

Stein, Josh, Maxime Di Folco, and Julia A. Schnabel. "Sparse annotation strategies for segmentation of short axis cardiac MRI." International Workshop on Statistical Atlases and Computational Models of the Heart. Cham: Springer Nature Switzerland, 2023.

Stein, Josh, Maxime Di Folco, and Julia A. Schnabel. "Influence of Prompting Strategies on Segment Anything Model (SAM) for Short-axis Cardiac MRI Segmentation." BVM Workshop. Wiesbaden: Springer Fachmedien Wiesbaden, 2024.

Volunteer experience

Tutoring program at College of Magic

Initially, I started tutoring two students with maths and physical sciences. Several students then began approaching me, asking for more help. Subsequently, I started a volunteer tutoring program aimed at helping current College of Magic students with ongoing schoolwork, with a focus on STEM subjects.

Volunteer teaching Nov. 2016 - Jan. 2017

Volunteered as a teacher to assist with Maths and Physical Sciences for Axium Education in the Eastern Cape, South Africa.

First line healthcare Jun. 2015 - Jul. 2016

Volunteered at clinics around Zithulele, Easter Cape delivering first line healthcare (pap smears, BP tests, heart rate, glucose, HIV).

Honors

Graduated with first class honors (University of Cape Town)	2019
Dean's Merit list (University of Cape Town)	2018
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