

Tejas Krishnan

Mathematics and Computer Science Student at Oxford
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Education

MSc Mathematics and Computer Science, St Anne's College, University of Oxford Oct 2022 – Jun 2026

- First and second year results: First (above 70%)
- Courses: Data Structures and Algorithms, Concurrent Programming, Machine Learning, Probability, Linear Algebra

International Baccalaureate Diploma Program, International School Basel, Switzerland Aug 2020 – May 2022

- Diploma score: 45/45; Courses: Mathematics HL, Physics HL, Chemistry HL, Economics SL, English A SL, German B SL

Experience

STEP Intern, Google July 2024 – September 2024

- Collaborated in an Agile team of 5 on the design and execution of all components of a data migration feature for an Android app
- Implemented the complete UI flow for the feature involving RPC APIs, a dependency injection framework, and rigorous testing
- Designed and implemented an algorithm to estimate the required storage space for database conversion based on an in-depth understanding of the SQLite database format. Achieved an experimental error of 1MB with the algorithm.

Software Developer, Locaze August 2023 – June 2024

- Wrote a head pose estimation algorithm using a face mesh and smoothing that had 50% less noise than existing methods
- Discussed and devised quantitative metrics to assess temporal and spatial accuracy of eye movement when tracking a dot
- Optimized the video processing pipeline using benchmarking and multithreading leading to a 70% decrease in processing time

Software Development Engineer Summer Intern, BitWise Academy Jun 2022 – Sep 2022

- Utilized React, Bootstrap, client-server communication in JavaScript, and NLP for entity and intent recognition in a team of three
- Wrote weekly plans and attended daily meetings to present updates on progress and jointly troubleshoot any issues
- Scaled a chatbot on an AWS instance using Docker and Kubernetes with a load balancer to handle 100+ requests a minute

Honors & Certifications

- IBM Full Stack Software Developer Professional Certificate
- Audited MITx: Mathematical Methods for Quantitative Finance and auditing MITx: Foundations of Modern Finance 1
- Swiss Maths Olympiad Bronze Medalist and represented Switzerland at the Middle European Maths Olympiad (MEMO)
- National Merit Finalist (USA) and recipient of National Merit Novartis Scholarship
- UKIEPC (regional ICPC contest) 23rd team in the UK
- Duke of Edinburgh Silver Award

Projects

TimetableScan – published online and open-sourced Jul 2023 – Oct 2023

- Developed a Python program using OpenCV and PyTesseract that parses a digital timetable image into any calendar service
- Works with high accuracy on over 80% of standard timetable formats and includes a user interface to edit any parsing errors
- Used image processing techniques including a modified Hough Line Transform, OCR, and a REST API made with Flask
- Created an intuitive React frontend and deployed on an AWS instance with Docker, Kubernetes, NGINX, and Unicorn

Pestle+ - on Chrome Web Store with over 900 users May 2022 – Sep 2022

- Collaborated with a partner to build a Chrome extension that extends the functionality of a question bank website called Pestle
- Employed an NLP-based algorithm with a tailored equation that combined sentiment analysis and named entity recognition on examiners' remarks for each question to produce a difficulty score and rank questions by difficulty
- Used keyword extraction and document distance with word vectors to find related questions for each question

TRACR: Scheduling App – previously on Apple App Store Jun 2021 – April 2022

- Led a team of 4 and organized weekly meetings to develop an app that schedules time to work on assignments given, as input, the length and due date of the assignments, a list of working hours, and numerous other preferences
- Utilized Swift, SwiftUI and the Google Classroom API, and designed a complex scheduling algorithm from the ground up
- Beta tested in schools, incorporated feedback from students, and published on Apple App Store until Jun 2023

Skills and Interests

Languages: Fluent in English and Tamil; professional working proficiency in German

Programming: C++, Python, Java, Swift, Machine learning, Computer vision, NLP, Data science, Web scraping, Full stack

Societies: Analyst for CapItOx (Finance society) Quantitative Strategies Fund; Violinist in the Oxford University Orchestra

Sports: Organizer of and player for college tennis, 5km and 10km running, indoor bouldering