

Tharun Kumar Tiruppali Kalidoss

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Junior at Princeton University

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Education

Princeton University
B.S.E. Computer Science
Aug 2022 - May 2026

Relevant Courses: Theory of Algorithms w/ Dr. Robert Tarjan, Distributed Systems, Real Analysis, Stochastic Systems, Reinforcement Learning, Economics in Computing, Intro ML, Data Structures and Algorithms, Discrete Math, Linear Algebra.

Technical Skills

React, JavaScript, Typescript, Python, Java, SQL and NoSQL Databases, TensorFlow, Azure, AWS, SwiftUI, UIKit, Mobile Development, Full-stack Development, Swift, Machine Learning, Agile Development, CI/CD, Flask, PyTorch, Solidity, Test Automation, Selenium, Jest

Relevant Experience

Founder — Eric Schmidt Incubator, San Francisco, CA

May 2024 – Aug 2024

- Worked under **direct mentorship from Eric Schmidt and Sebastian Thrun** with grant-based funding.
- Built viral SwiftUI application for deep-faking your friends via voice-cloning, lip-syncing, and movement. Use 3D-reconstruction and pose estimation/mapping, fine-tuned lip-syncing models to achieve viral UGC. On the iOS App Store (trystorm.app).
- Developed novel video-splicing, editing, and collaging algorithm, and integrated into a full-stack SwiftUI application delivered on the iOS App Store (memorie.app). Partnered with large TikTok and Instagram influencers for go-to-market strategy.
- Built LoRA fine-tuning library hosted on scalable H100 infrastructure, and full-stack iOS application to generate personalized, hyper-realistic images of users for social media apps. DateMax AI is on the iOS App Store (datemaxai-web.vercel.app).

Software Engineering Lead — Nora Music, Contract, Remote

Aug 2023 – Mar 2024

- Leveraged NextJS, AWS S3, MySQL, and AWS Lambda to develop full-stack audio exploration web app. Recruited and led a small team of engineers to develop API service and data infrastructure for seamless data piping from clients.
- Developed a state-of-the-art webcrawler with Selenium with GPT data-cleaning pipeline. Fully automated in AWS EC2.
- Invented the `Nora file`: a proprietary encryption system and ML-based audio fingerprinting strategy to prevent song/audio piracy
- Built the first MVP to demonstrate prototype, secured first funding round in Nov 2023.

Python Developer — OpenAI, Contract, Remote

Nov 2022 – Mar 2023

- Developed integral training datasets for GPT 3 and Codex AI using Python, NumPy, SciPy, Matplotlib.
- Trained LLM through reinforcement learning based on human feedback, prompting, and automated testing. Cleaned and optimized code-based datasets based on patterns of inefficiency to cater most effective learning potential for the LLM.
- Adapted to rigorous technical expectations through self-learning and mentorship by LLM-focused Data Scientists at OpenAI.

Software Engineering Internship — RescaleMed, Contract, Remote

Jun 2023 – Aug 2023

- Led development of **full-stack mobile** cross-platform chatbot application. Built using React Native, Typescript, AWS Cloud, MongoDB Serverless functions. Application is available on the iOS app store as "Tibb".
- Utilized CI/CD protocol with an agile application delivery pipeline to active testers during development.
- Trained proprietary GPT-based LLM optimized for client-facing mental health aid. Encrypted data compliant with GDPR.
- Designed and built scalable NoSQL database architecture with optimized retrieval/insertion. Automated testing using Jest, Selenium, and unit tests.

Data Science Researcher — University of West Attica TelSiP, Athens, GR

Jun 2023 – Aug 2023

- Created a novel CV dataset with state-of-the-art metadata by developing an iPad-based signature acquisition application using Swift, React Native, Flask, PyTorch. Paper detailing findings pending publication.
- Successfully trained PyTorch computer vision model with iOS's ARKit to track gaze of users during signature collection phase.
- Maintained encrypted data on local disks through Flask-based server and REST APIs to follow GDPR regulation

Projects

RL-based Obstacle Avoidance for Drone Swarms

Jul 2024

- Trained RL-based obstacle avoidance algorithm while maintaining drone swarm configuration via OpenAI gym real-life physics environment. Won Project Eagle hackathon at AGI House. (github.com/tharunkumartk/pje-hackathon)

Open-Source NPM Package – Expo-PencilKit

Jul 2023

- Developed and maintained open-source package which exposed Apple PencilKit to React Native binaries, allowing for more granular access to pressure, azimuth, altitude, and hover details in React Native. (github.com/tharunkumartk/expo-pencilkit)

Award-winning GPT-based Arcade Wagering Platform built on Ethereum

Mar 2023

- Collaborated with small engineering team to develop wagering platform for web-based arcade games using React, Flask, Firebase, Solidity, Arbitrum. Smart contracts built on the Arbitrum test-net. (github.com/tharunkumartk/cadia)
- Won a total of \$25,000 in prize money, winning Princeton Pitch, Princeton's DeSo Hackathon, and LionHack.

Leadership

CO-PRESIDENT — Princeton Blockchain Club, Princeton, NJ

Sep 2022 - Present