Vinoth Pandian, PhD

Toronto, Canada | Remote | Hybrid | Onsite
vinoth.info • linkedin.com/in/vinothpandian • Publications

github.com/vinothpandian

Programming languages:
Javascript, Typescript, Python

CAREER SUMMARY

- **AI Research Engineering Manager** with **12+ years of experience.**
- **Management: 4+ years** experience in **leading** and mentoring **engineering teams** of **14+ AI/ML engineers**.
- **Individual Contributor: 8+ years** of experience as an individual contributor.
- Specialized in Legal **NLP, ML** infrastructure, **model optimization**, **data processing** strategies, and **software development**.
- Extensive experience in **Python, Typescript**, **JavaScript** and web dev frameworks such as **React**, **FastAPI**, **Next.js**.
- Developed multiple **AI/ML**, **full-stack** and **mobile applications.**
- Extensive experience in implementing **MLOps** and **LLMOps** workflows.
- **Ph.D.** with **magna cum laude** in **Human-Centered Artificial Intelligence** (HCAI) with **230+ citations.**

IMPACT SUMMARY

- Led the development of **distributed large-scale NLP systems, optimizing** legal research **workflows** and contributing to product **revenue growth to $9 million.**

- **95% reduction in search time** for a critical feature achieved by developing an **AI-powered search** experience using **NLP** and **optimized algorithm design**.

- Aligned **product strategy**, **processes**, and **decision-making** across multiple **cross-functional teams**.

- Developed the **technical vision** and **roadmap** of **7+ AI product development** in multiple areas of legal research.

- Expanded the ML engineering team from 6 to **12 ML engineers** by establishing and **managing** the **hiring process**.

- Improved **team productivity by 20%** by **streamlining** development **processes** and standardizing **best practices**.

PROFESSIONAL EXPERIENCE

Research Engineering Manager (AI)
Feb 2024 - Present
Thomson Reuters (Labs - R&D)
Toronto, Canada

- Managed the engineering team of **12 ML engineers** and oversaw project strategies & processes to develop **10+ NLP projects** within the legal sector.
- Led the design and implementation of advanced **AI-driven functionalities** with model training, **model optimization**, **data processing** strategies and deployment processes, ensuring that engineers adhered to established **MLOps** and **LLMOps** best practices.
- Led the development of **distributed large-scale NLP and RL systems, optimizing** legal research **workflows,** and contributing to product **revenue growth to $9 million.**
- Aligned **product strategy**, **processes**, and **decision-making** across multiple **cross-functional teams**.
- Developed the **technical vision** and **roadmap** of **7+ AI product development** in multiple areas of legal research.
- Expanded the ML engineering team from 6 to **12 ML engineers** by establishing and **managing** the **hiring process**.

Staff Software Engineer
May 2022 - Jan 2024
Secoda
Toronto, Canada

- **Managed the core engineering team** and oversaw project strategies & processes to develop an AI-powered data documentation web app for searching, organizing, cataloging and discovering data.
- Led the design and implementation of advanced AI-driven functionalities with **NLP**, such as LLM-powered data documentation, **semantic search**, and **text summarization**.
- Developed guidelines and architecture for frontend (**React**), backend (**Python**), and **MLOps** to be scalable, maintainable, and reliable.
- Utilized **Sentry** to analyze data and track metrics to improve the technical performance and UX design of the application.
- Led and implemented the **vector-based semantic search** to improve contextual search and optimized the critical fuzzy text functionality **search time by 95%** (from **13s to 600ms**).

Senior Full-stack Engineer   November 2021 - April 2022
MeetAnyway GmbH   Stuttgart, Germany
- Developed an interactive web application to organize and attend engaging online live video conferences used by thousands of participants in numerous events organized by academic and commercial institutes.
- Worked on frontend web development with Server Side Rendering **Next.js**, React Query tech stack and backend development of **RESTful API** using **Django** framework in **Python**.
- Enhanced **code consistency** and **readability** by introducing stricter automated **linting** and fixed **400+ issues**.
- Improved the **test-driven** frontend development process by introducing **automated Cypress**-based component testing.

Web Development Lead (Research Associate)   July 2017 - October 2021
Fraunhofer Institute   Sankt Augustin, Germany
- Led a development team of **5 engineers** to build a **B2B AI chatbot** training tool using **React**, **FastAPI** and **RASA**.
- Led several **web**, **mobile** and **cross-platform** application development projects for multiple European Union Horizon 2020 and German federal government projects.
- Conducted **code reviews** within the team and **mentored** team members to improve their technical and soft skills.
- Coordinated with UX design leads in **agile** scrum-based product development, grounded on user-centered design principles, and actively conducted **scrum** meetings within the team to ensure alignment and efficient progress.
- Introduced **code-linting** and **Test-Driven Development** to the team, leading to **20% improved productivity** in **sprints**.
- Added **continuous integration** and **continuous deployment pipeline** to **decrease deployment time by 90%**.
- Implemented a **Design System** to unify component development and **decrease redesign effort by 50%**.

Software Engineering Senior Analyst   January 2013 - August 2016
Accenture   Frankfurt, Germany & Chennai, India
- Worked as a business analyst and functional tester for an **agile**-based financial markets project for a prominent stock exchange client.

EDUCATION

RWTH Aachen University, PhD in Human-Computer Interaction & AI   February 2019 - February 2022
- Distinction: **Magna Cum Laude**

RWTH Aachen University, Master of Science in Media Informatics   September 2016 - February 2019
Sri Krishna College of Engineering, Bachelor of Technology in Information Technology   August 2008 - April 2012

CERTIFICATIONS & AWARDS

Magna Cum Laude in Doctoral Thesis | RWTH Aachen University   February 2022
Generative Adversarial Networks (GANs) Specialization | Deeplearning.ai   February 2021
Deep Learning Specialization | Deeplearning.ai   May 2018
LauzHack Hackathon winner of Bloomberg's Favourite Hack | EPFL, Switzerland   November 2017

SKILLS

ML: OpenCV 2, NumPy, SciPy, Pandas | Fast.AI, PyTorch, TensorFlow | SageMaker, VertexAI, KubeFlow

Backend: Python 3 | FastAPI, Django | Celery, Django-Q | PostgreSQL, MySQL | PyTest

Frontend: Typescript, Javascript, HTML | CSS, SASS | React, React Native | React-Query | Tailwind | Playwright, Vitest

Development Tools & DevOps: Visual Studio Code, PyCharm | Docker, Docker compose | Git | AWS | Azure

Design & Prototyping: Figma, Adobe XD

Soft Skills: Innovative problem solving | Responsive, proactive & committed | Teamwork & collaboration | Project management & leadership | Clear verbal & written communication | Highly organized | Attention to detail