AAKARSHIT PANDEY

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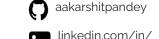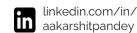○ aakarshitpandey
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EDUCATION

PURDUE UNIVERSITY
WEST LAFAYETTE, IN.
(*Aug 2018 - Dec 2021*)
B.S. in **Computer Science**
(Concentration: **Machine Intelligence**, **Systems Software**, **Database & Information Systems**)
- Certificate in *Entrepreneurship and Innovation,*
- Minor in *Mathematics.*
- GPA: *3.99 / 4.0*
- *Graduated with Highest Distinction*

RELEVANT COURSES:
Artificial Intelligence
Database Systems
Analysis of algorithms
Data Mining and ML
Compilers (Grad Level)
Operating Systems
Computer Security
Computer Networking

SKILLS

LANGUAGES:
- (Proficient): Java, C, JavaScript, Typescript, Swift, Python, C++, PowerShell, SQL
- (Familiar): C#, R, Bash Scripting.

TECHNOLOGIES:
- Windows OS Drivers
- LangChain, OpenAI, LLMs
- Spark & Spark Streaming,
- React, NextJS, NodeJS, MongoDB
- OpenCV, Librosa
- Django, Flask
- Android & iOS App Dev
- gRPC, Spring Boot
- AWS, GCP, Azure

RECOGNITION

DEAN'S LIST (Fall '18 - Fall '22)
Awarded for academic excellence every semester.

MOST INNOVATIVE IDEA
Awarded for the proposition of a **Neural network** based COVID test at Decoding COVID event by South Asian Medical Student Association.

EXPERIENCE

MICROSOFT • SOFTWARE ENGINEER   *Feb '22 – Present | Redmond, WA*
- Working for the Windows Networking, Security, and Containers team.
- **Adding Windows Firewall support to WSL containers:**
  - **Critical** to the **enterprise adoption of WSL in windows**
  - Estimated impact: **20M devices,** Revenue growth: **$1M/month**.
- **Windows Firewall enhancement to support firewall rule creation using app tags:**
  - Allows multi-app network control using a single rule as opposed to the cumbersome binary path/IP address-based rule creation approach.
  - It provides a **major competitive advantage to Microsoft's Enterprise Security offerings**.
- **Generative AI** code authoring tool using **Azure OpenAI Service (GPT-4):**
  - **LLM** based **code fix generation** for **various security vulnerabilities** which are reported for Windows OS components. Leverages few-shot training approach on custom data.
  - This will **increase developer productivity** by **40-50%**.
- **Azure Container Networking infrastructure:**
  - Maintaining the Host Networking Service, foundational to **Azure Kubernetes Service**, **Azure NPM**, **Docker for Windows**, etc.
- **Kernel/user mode networking drivers:**
  - Owning security vulnerabilities & feature additions in **Windows Firewall, Windows Filtering Platform,** and all **VPN protocols**.
  - These are **patched to every Windows user (Win11 – Vista) every month.**
- Skills: **OS Programming, Networking, C, C++, Windows Drivers, Azure OpenAI Service**

SALESFORCE • SOFTWARE ENGINEER INTERN   *May '21 – Aug '21 | San Francisco, CA*
- Worked on the Calculated Insights team for the **Audience 360** product.
- Built the **job orchestration engine** and the **spark streaming map-reduce job** for ingesting Kafka streams, data validation, transformation, enrichment, and delivering it to the data lake and customer-specified action endpoints.
- Built a standalone data validation library for use by **multiple teams across the org.**
- Skills: **gRPC**, **Apache Spark, Kafka, AWS (EMR, S3), Spring Boot**

SALESFORCE • SOFTWARE ENGINEER INTERN   *May '20 – July '20 | Remote*
- Developed a **full-stack framework** for automated recovery of failing Data Pipelines and Elastic Map Reduce jobs that are running on AWS.
- Incorporated several heuristics for automation, **directly impacting** the **response time** for approx. **40% of the jobs** by multiple folds and many more indirectly.
- Skills: **Spring Boot**, **AWS** (EMR, Data Pipelines, S3), PostgreSQL, **React**

PROJECTS & LEADERSHIP

AUSCULTATORY SOUND ANALYSIS CHATBOT
- A **conversational agent** with all the GPT capabilities, specializes in **predicting whether a person has COVID-19 or not based on their breathing sounds**.
- **Trained GPT-4 LLM on custom dataset** of breathing sound and covid test status of subjects.
- Used librosa for audio processing (obtaining mel-spectogram data from the audio files)
- Technologies: **OpenAI, LangChain, Librosa**.

HACKATHON WEB APP • DEV LEAD
- Led a scrum team and developed a **web app** and a **native mobile app** for managing, hosting, and judging the hackathon.
- Technologies: **Node (ExpressJS), React (NextJS), GCP,** and **MongoDB**

MERCHANT
- **Swift** and **NodeJS** based **iOS** App which is a closed community **e-commerce** app that lets users and negotiate/interact at self-identified safe spots (Map & Live location integration).