NAVNEET SINGH ARORA

Technical Lead | Machine Learning & Full Stack Engineer
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CAREER OBJECTIVE

Experienced Engineer specialising in Machine Learning and Full-Stack development with seven years of industry experience. Proven leader in driving operational excellence, scaling teams, and delivering innovative solutions. Seeking a role in Research to leverage expertise in Deep Learning, emphasising Computer Vision, Video and Speech Analysis, software development, team management, and Agile methodologies.

WORK EXPERIENCE

MACHINE LEARNING ENGINEER
REPATH
MARCH 2023 - PRESENT
HAMBURG, GERMANY

- Working with the climate research team to develop the statistical climate regression model for asset-impact vulnerability.
- Created the GeoSpatial Analysis tool using CNN-based architecture mapping flooding data with asset specific satellite imagery.

SOFTWARE ENGINEER (Working Student)
REPATH
DECEMBER 2021 - MARCH 2023
HAMBURG, GERMANY

- Created the first ETL service to transform 100+TBs of climate data, making it user-understandable using Python and GraphQL API.
- Initiated the product development cycle oversight through Agile methodologies, JIRA, and Confluence documentation.
- Spearheaded software architecture planning, database management, and data integration.
- Acted as a critical liaison with the CTO, CEO, and stakeholders, ensuring project alignment between Tech, Climate and Product Teams.

STUDENT ASSISTANT (Working Student)
COMPUTER VISION GROUP, UNIVERSITÄT HAMBURG
OCTOBER 2021 - MARCH 2022
HAMBURG, GERMANY

- Conducted practical labs for students to implement basic code using Jupyter Notebooks and, in some cases, PyTorch.
- Managed Course Administration, including assignment preparation and holding Q&A sessions.

TECH LEAD
NICE
JANUARY 2018 - OCTOBER 2020
PUNE, MAHARASHTRA, INDIA

- Led a development team of 12 engineers in software analysis and product platform rebuilding.
- Developed front-end with AngularJs and backend with Java Spring; designed Tableau Dashboards.
- Designed & developed Tableau Dashboards with parameter adjustment to boost performance and allowing improved data analysis.

PROGRAM ANALYST
COGNIZANT
JANUARY 2015 - JANUARY 2018
PUNE, MAHARASHTRA, INDIA

- Served as Project Innovation Lead, saving $40,000 in client (Credit-Suisse) costs.
- Automated the deployment pipeline, reducing deployment time from 4 hours to 20 minutes per service.

EDUCATION

MSC. INTELLIGENT ADAPTIVE SYSTEMS
UNIVERSITÄT HAMBURG
OCTOBER 2020 - MARCH 2023
HAMBURG, GERMANY
GRADE: 1.81 (GERMAN GRADING SCALE)

- Worked on multiple projects and an Independent Study in the domain of Computer Vision.
- Thesis: Multi-Modal Representation Learning for Emotion Recognition in Continuous Domain.

BSC. COMPUTER SCIENCE AND ENGINEERING
LOVELY PROFESSIONAL UNIVERSITY
AUGUST 2011 - MAY 2015
PHAGWARA, PUNJAB, INDIA
GRADE: 2.26 (GERMAN GRADING SCALE)

- Gained knowledge on Database Systems and Cloud Architectures

SKILLS

PROGRAMMING Python, Java, Javascript, SQL
TOOLS AND FRAMEWORKS PyTorch, Spring, Docker, Hasura, PostgreSQL, Aiven, Auth0, Tableau, Git, GitHub, JIRA, Confluence
SOFT SKILLS Leadership, Team Management, Communication, Agile Methodology
LANGUAGES English (C1), German (A2), Hindi (Native), Punjabi (Native)

PROJECTS

COLLABORATIVE MULTI-AGENT NAVIGATION USING TEXTUAL VISUAL EMBEDDINGS
AUGUST 2022

MASTER PROJECT

- Lead a team of 5 students to build a Textual-Visual Model in a virtual environment using AI2-THOR.
- Developed the pipeline to create a training dataset through the Virtual environment, including the textual information.
- Trained and fine-tuned the CLIP and the COLMAN Model.

VISUAL REPRESENTATION LEARNING FOR EMOTION DETECTION IN CONTINUOUS DOMAIN
SEPTEMBER 2022

INDEPENDENT STUDY

- Developed a CNN-based Dimensional Prosody Recognition Model by extracting the visual conversational sequences incorporating bi-directional LSTMs.

DialogueGCN - GRAPH CONVOLUTION NETWORK FOR EMOTION DETECTION
MARCH 2022

PROJECT

- Implemented and fine-tuned the existing DialogueGCN model to emotional classification.
- Achieved 64% accuracy, matching the claimed accuracy by the authors.

FAZE - FEW-SHOT GAZE ESTIMATION
JANUARY 2022

PROJECT

- Implemented, trained and fine-tuned the existing FAZE Network.
- Executed ablation studies to understand the effect of rotated and unrotated calibration samples.
- Reduced the mean errors by 26% using an ensemble model involving 2 different encoders architectures.

IndoRE CHALLENGE
NOVEMBER 2021

PROJECT

- Developed a relation extraction model by fine-tuning RoBERTa using Distant Supervision to achieve 97% accuracy for three low-resource Indian languages: Hindi, Bengali and Telugu.

CRIMINAL LOGGING AND IDENTIFICATION SYSTEM
APRIL 2015

BACHELOR PROJECT

- Created a cross-platform criminal logging and identification system using Javascript, C# and RDBMS.
- Compatible with Android, Windows Mobile, and available as a web application.
- Selected under Top 10 Best Projects in the Computer Science Department.