Akshay Joshi

M. Sc. Data Science & Artificial Intelligence

Graduate student with an extensive background in Semiconductors & Software Engineering R&D, currently pursuing research in Semi-supervised Learning, Neuro-Symbolic Reasoning & Multilingual Conversational Question Answering at UdS, Germany.

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WORK EXPERIENCE

Graduate Teaching Assistant
Universität des Saarlandes

09/2020 - 02/2021   *Saarbrücken, Germany*

Achievements/Tasks
- TA for the lecture 'Architectures for Intelligent Systems' offered by Dr. Jana Koehler (Chair of Artificial Intelligence Group).
- Develop materials for Reinforcement Learning, Intelligent Agents using Symbolic AI algorithms for Searching, Planning & Reasoning.

Software Engineer I
Advanced Micro Devices R&D ☐

08/2018 - 09/2019   *Bangalore, India*

Achievements/Tasks
- Instrumental in the design & development of 'Platform Security Processor' firmware.
- Owner for the design & validation of 'Microsoft PlayReady' DRM protection technology for AMD's Ryzen processors.
- Recommended by the Director of Software Engineering at AMD for my technical expertise and agile adaptability skills.

Intern
Advanced Micro Devices R&D ☐

02/2018 - 08/2018   *Bangalore, India*

Achievements/Tasks
- Developed & validated AMD Ryzen Master Software Development Kit for CPU & Memory Overclocking utilities.
- Delivered ~70 multi-platform Windows SDK APIs in 6 months.

Software Development Engineer
Freelance

07/2017 - 01/2018   *Bangalore, India*

Achievements/Tasks
- Built SQLMAP based tools to penetration test websites for a range of zero day exploits, vulnerabilities & information leakages.
- Exposed critical DB flaw which leaked 1,00,000 peoples' credential.

Engineering Intern
Alstom ☐

01/2017 - 03/2017   *Bangalore, India*

Achievements/Tasks
- Developed the data pre-processing pipeline which involved Data Cleansing, Wrangling & Dimensionality Reduction.
- Performed Exploratory Data Analysis to discover sensitive patterns, significance and anomalies in the statistical data.
- Built Regression & Forecast models for predictive analytics.

EDUCATION

M. Sc. in Data Science & Artificial Intelligence
Universität des Saarlandes ☐

10/2019 - Present   *Saarbrücken, Germany*

B. Eng. in Computer Science & Engineering
Visvesvaraya Technological University ☐

08/2013 - 06/2017   *Bangalore, India*

TECHNICAL SKILLS

Python | C++ | NumPy | PyTorch | Scikit - learn | OpenCV | CUDA | SQL | Computer Vision | NLP | R | Statistics | Computer Graphics | Deep Learning | Tableau | Apache Spark | IR | Data Mining | Docker | A/B Testing | GIT | JIRA | Cloud | Image Processing

RESEARCH PAPERS

Dense Art Style Recognition with Self-supervised Ensemble of Auto-Encoding Transformations [In Progress] ☐

Investigation on the use of deep semi-supervised neural models to extract dense features in complex & ambiguous images spanning across 27 unique artistic styles. Self-supervision enforced to resolve class imbalance of WikiArt dataset. The dataset has 30 GBs of high-res paintings. Outperformed existing **state-of-the-art** *methods by achieving an overall accuracy gain of* **~15%**.

ACADEMIC PROJECTS

Sentiment Analysis & Data Exploration of COVID-19 Tweets w/ Self-Attention Networks & XGBoost (08/2020 - Present)

Multi-stage Informational Retrieval & Ranking System using LM, BM25 (Okapi, Plus), TFIDF (08/2020 - 08/2020) ☐
- The query processing time was reduced to **~8 mins** from **20 mins** using parallel processing, caching & efficient data structures.

Open-domain Question Answering with End-to-End Memory Networks over KG & Text (07/2020 - 08/2020) ☐

Real-time Event-driven Object Detection & Counting with YOLO v3 & OpenCV (05/2020 - 07/2020) ☐

Architecture for Context-aware Intelligent Assistant using Deep Reinforcement Learning (08/2019 - 02/2020) ☐

SEMINARS & CONFERENCES

Presentation on 'The Fundamentals of an x86 Server' at the Indian Institute of Science (02/2019 - 02/2019)

Research Poster on 'Advanced Cryptographic Standards & Security' at Computer Society of India (04/2017 - 04/2017)

Seminar on 'High Performance Quantum Computing' at Cambridge Institute of Technology (03/2017 - 05/2017)

HONOURS & ACHIEVEMENTS

Ranked in the Top 5% of the graduating class of Computer Science & Engineering (08/2013 - 07/2017)
Total number of Graduating Students: **106**

Vice Captain of state-level Throwball team in Pre-University Throwball tournament (12/2012 - 12/2012)

LANGUAGES

English
Full Professional Proficiency

German
Limited Working Proficiency