

# 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.



s8akjosh@stud.uni-saarland.de ✉

+49 1573 3643012 📞

Saarbrücken, Germany 📍

26 May, 1995 📅

linkedin.com/in/akshayjoshi56 in

github.com/akshayjoshii 🐙

## 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 tools to penetration test websites for a range of zero day exploits, vulnerabilities & information leakages.
- Exposed critical DB flaw which leaked 100000 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