

Akash Singh

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Computer Science master's student with experience in software design and application development. Has two years of professional experience in programming in Python and SAS-SQL. I am currently seeking to utilize my analytical mindset and fast learning capability in software development to build robust and scalable backend systems.

The University of Texas at Dallas

Aug 2021 - Aug 2023*

Master of Science (MS) – Computer Science (GPA: 3.9/4)

Indian Institute of Technology (IIT), Kanpur

Jul 2014 – May 2018

Bachelor of Technology (B.Tech) – Mechanical Engineering (CPI: 7/10)

Recipient of 'The Proficiency Medal' for the best undergraduate project in the Mechanical Engineering Department

TECHNICAL SKILLS

Programming Languages & Utilities – Python, Java, C++, Kubernetes, SQL, HTML, Assembly language, Git

Libraries – OpenCV, Pandas, NumPy, Scikit-Learn, Matplotlib | Operating Systems – Windows, Linux

Coursework – Programming in C, Data Structures, Design and Analysis of Algorithms, Computer Architecture, Operating Systems, Machine Learning, Speech Signal Processing, Robotics, Economics

PROFESSIONAL EXPERIENCE

Senior Software Engineer Intern – Controllers, A10 Networks

May 2022 – Aug 2021

- Integrated external authentication services (TACACS+, RADIUS) on centralized management & analytics application consisting of micro-services, deployed in docker container and managed using Kubernetes on a cloud environment
- Built a feature to summarize JSON configuration objects as meaningful & concise text to enhance user experience

Manager – Credit Risk, Axis Bank

Mar 2019 – Jun 2021

- Built Python-based algorithmic tools for deriving interest payment due days, non-business credit transactions
- Automated pipelines to produce Tableau reports, which effectively reduced the dashboard generation time by 50%
- Strategized acquisition scorecard cut-offs to maximize profitability and tested cut-offs with response XML in SoapUI
- Built decision-tree models to strategize application renewals, credit-limit modifications, early-warning triggers
- Led three direct reports: responsible for training, code reviews, managing ad-hoc tasks, and performance reviews

Graduate Engineer Trainee – Manufacturing, Amway

Jun 2018 – Sep 2018

Research Intern – Production Engineering, Hero MotoCorp

May 2017 – Jul 2017

KEY PROJECTS

Asynchronous Pipeline Sorter (Course: Operating Systems Concepts)

Feb 2021 – Mar 2021

- Developed a C++ API based on multiclient-server architecture to perform a multi-threaded merge sort of integers
- The server was designed to accept concurrent requests from clients via TCP sockets and store them asynchronously

Look and Decipher – ArtSciLab, UTD

Sep 2021 – Nov 2021

- Developed a Python-based service to solve a camera image of a 9x9 sudoku grid and achieved an accuracy of 91%
- Built an android application and linked it to the service via the firebase database for transmitting input and output
- Processed the image with blurring, thresholding, dilation, quadrilateral detection, and perspective transformation
- Utilized Pytesseract for optical character recognition and backtracking algorithm to solve the detected sudoku grid

Encoding Higher Order Ambisonics (HOA) with Advanced Audio Coding (AAC)

Jan 2018 – Apr 2018

- Analyzed encoder-decoder frameworks for transmitting and storing AAC encoded HOA signals at optimal bit-rate
- Validated the results with Wave Field Analysis for various no. of channels & signal frequency and concluded the best compression of B-format signal through Mid Tread Signal Quantizer and Huffman lossless coding algorithm

HACKATHONS

Face Recognition Application - SYND iNOVATE 2019 Hackathon

Jul 2019 – Sep 2019

Developed a real-time face recognition application in Python using a 2D-PCA algorithm, giving 77% accuracy

Table Reading & Understanding in Documents/Images - Axis Bank AI 2018 Hackathon

Oct 2018 – Dec 2018

- Built an image processing model to extract structured & unstructured tabular data from scanned/digital documents
- Achieved 90% accuracy on table detection and 70% accuracy on tabular structure extraction
- Qualified among top-8 from a pool of 3000+ teams and received an offer to join Axis Bank as a full-time employee