Akash Singh

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Computer Science masters' student with fundamental knowledge in software design and application development. Has 2 years of professional experience in programming in Python, 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: 4/4)**

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++, 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

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*
Analyzed conductivity time-series data of centrifugal chiller within the closed-loop system and optimized input water parameters from the waste and effluent treatment plant, which estimated to reduce corrosion by 15%

Research Intern - Production Engineering, Hero MotoCorp *May 2017 – Jul 2017*
Analyzed takt & cycle time to identify the bottlenecks in production processes at each assembly station to recommend improvements which resulted in a 7% improvement in the existing line balancing efficiency

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, 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 iNNOVATE 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