

# Akash Singh

Email: [akash.singh2@utdallas.edu](mailto:akash.singh2@utdallas.edu) | Mobile: +1-214-430-9721

<https://www.linkedin.com/in/akash-singh-0710/>

<https://github.com/akashsingh0710>

## The University of Texas at Dallas

Aug'21 - Present

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

## Indian Institute of Technology (IIT), Kanpur

Jul'14 - May'18

- 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, SAS, MATLAB
- Libraries – OpenCV, Pandas, NumPy, Scikit-Learn, Matplotlib, TensorFlow, Keras

## PROFESSIONAL EXPERIENCE

### Manager – Credit Risk Analytics, Axis Bank

Mar'19 - Jun'21

- Responsible for providing data-driven solutions to manage credit risk involved in the loan portfolio of retail businesses by performing stress tests, developing risk models, re-calibrating policies, and underwriting rules
- Risk Analysis Framework Setup
  - Introduced risk appetite guardrails using PD-LGD model and automated pipelines to generate Tableau reports
  - Built SAS based tool for deriving interest payment days, non-business transactions for working capital accounts
- Scorecard Development and Risk Strategy Implementation
  - Performed feature engineering on the transactional, credit bureau, financial, liability, and limit utilization data
  - Collaborated with the data science team to refine variables in existing Behavioural and Acquisition Scorecards
  - Strategized score-cut-offs to maximize profitability and tested the cut-offs with response XML in SoapUI
  - Utilized B-Score to develop decision-tree based early warning trigger model to recommend credit-limit changes
  - Devised application renewal strategy to increase auto-renewals from 40% to 85% without compromising on risk
- Led three direct reports; responsible for training, code reviews, managing ad-hoc tasks, and performance reviews

### Graduate Engineer Trainee – Manufacturing, Amway

Jun'18 - Sep'18

- 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'17 - Jul'17

- 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

### Look and Decipher

Sep'21 - Nov'21

- Developed a backend python tool 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 python tool via 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'18 - Apr'18

- 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

### Line-Maze Solving Autonomous Robot - Robotics Club, IIT Kanpur

Jun'15 - Jul'15

- Designed and manufactured a 2-wheel drive robot with an infrared sensor array to detect and traverse line-maze
- Tracked movements and maneuvered robot by controlling motor speed with the aid of Arduino and PID controller
- Solved the maze by finding the shortest distance using the left-straight-right-backward motion planning algorithm

## HACKATHONS

### Face Recognition Application - SYND iNOVATE 2019 Hackathon

Jul'19 - Sep'19

- 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'18 - Dec'18

- 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