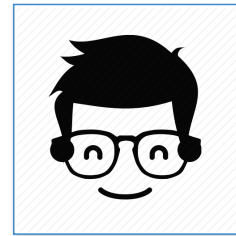# Nikhil Ahuja

Data Scientist | Python Geek | Tutor

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🌐 nikhilahuja.xyz in linkedin.com/in/ahujanik

Education

Masters of Information Technology   Feb'17 - Dec'18
Queensland University of Technology
Major: Data Science | GPA: 6.20

B.Tech - Computer Science   2010 - 2014
Amity University

Work Experience

Senior Data Scientist, Data and Integration   Aug'22 - To Date
Transport Analysis Unit, Department of Transport and Main Roads (TMR)

- Primarily working on the Queensland Freight Model, responsible for
  - Developing and guiding the system and database architecture for the model.
  - Oversee, review, test, and debug, the Python code and the technical reports for ongoing model development with the consultants, ensuring the development is done within the programming framework and quality standards established for the project.
  - Researching and developing the ETL pipelines for the raw datasets from various sources (ABS, UN, etc.), ensuring the data quality is fit for use by the model.
  - Developing a graphical interface purely in Python for model execution and exploration.
  - Developing dashboards for reporting the model results.
  - Researching and ensuring data quality, integrity, and fit for the usage of third-party datasets, like Compass Iot, Dspark, and EROADS for model development.

In-House Geek, Transport Analysis Unit (TAU), TMR   June'19 - To Date
Created this as a separate section to outline the work I do within the unit regardless of my team and position within the unit

- Currently, co-developing an in-house learning roadmap for the unit, to purpose-fill skill gaps within the unit.
- Currently, researching new data engineering platforms like, Snowflake and Databricks to be adopted by the whole unit.
- I also act as a defacto mentor for all things programming, data, and software development within the unit, for this I was also nominated for TMR's CUBIE awards in the **Empower People** Category.
- Share admin responsibilities for the unit's GitHub, AWS tenancy, and Postgres servers.
- Introduced the unit to the use of Git and version control in general when I first joined the team, self-hosted the GitLab server on AWS, and then led the migration to enterprise GitHub which was then adopted by other teams within the department as well.

Publications

Towards visualisation of traffic congestion using Bluetooth MAC Scanners (BMS): Automating the process of BMS links generation

Certifications

AWS Cloud Practitioner

Information Security Management Systems Professional by British Standards Institution (BSI).

Skills

Python
Data Analysis, Data Visualization, Data Mining, ETL, Machine Learning, Deep Learning

Databases
MySql, SQLite, Postgres, PostGIS

Geospatial Analysis
Python, QGIS

Alteryx
Data Analysis

Tableau
Data Visualization and Dashboarding

AWS
EC2, S3, SES, Amplify, RDS

Transport Modelling
Data Analysis, Data visualisations

KNIME
Data Mining, Data Analysis, Node Development

Data Analyst, Network Evaluation and Insights, TAU   Nov'20 - Aug'22

Spent significant time on multiple relieving stints as a senior data analyst, senior data scientist, and principal data analyst within various teams in the transport analysis unit.

- During this time, I successfully developed and delivered,
  - South East Queensland Evaluation Framework
  - Cost of Mobility Framework

- Developed and delivered the following benefits realization dashboards,
  - Queensland Transport Snapshot
  - National Land Transport Network Upgrade Investment Program
  - Passenger Transport Infrastructure Investment Program

- Led the development of an internal Python library to be used as a wrapper on a much more advanced external API from a third-party data provider (DSpark).
- Responsible for fulfilling Dspark data requests from within the department and or from external agencies within the Queensland government.
- Refactored existing codebase, planned the future development work and the database architecture for Queensland Freight Model.

Transport Modeler, Transport Modelling, TAU   June'19 - Oct'20

- Responsible for reviewing, testing, and debugging scripts for strategic transport models developed by external consultants ensuring the development is done within the programming framework and quality standards established for the project.
- Responsible for the development of end-user documentation, operational procedures, and ongoing maintenance for strategic modelling projects.
- Developed and deployed a MapBox-based dashboard to enable the modelling team to visualize the results of strategic transport models, extensively used for the Brisbane 2032 Olympics Bid preparation by the team.
- Responsible for coding ETL scripts for various processes as required.
- Project Custodian for Queensland Transport Modelling Community of Practice.

Research and Teaching Assistant   July'18 - June'19
Dr. Ashish Bhaskar (QUT)

- Analysis of traffic congestion in Brisbane City in collaboration with TMR
- Developed a data visualization dashboard for TMR using Tableau.

Research Assistant   June'18 - Nov'18
Dr. Richi Nayank (QUT)

- Web Application for interactive usage of machine learning models.

Software Developer   Oct'16 - Jan'17
ID Tech Solutions Pvt. Ltd.

- Responsible for meeting with new clients to gather specific requirements and designing the SRS document for the team to work with.
- Developing the software solutions as per the SRS documents.
- Working with the testing team to set up test environments and ensure the high quality of the software solutions being developed.

Software Developer   Sept'14 - Apr'16
Impressions Services Pvt. Ltd.

Project 1: Electronic Document Management System(EDMS)

- Implemented an open-source EDMS system within the organization.

Project 2: Biometric Attendance Monitoring System

- Planned and successfully executed the development and delivery of a Biometric attendance monitoring system using Raspberry Pi and a generic Biometric Sensor.
- Integrated the attendance monitoring system into the company's payroll systems.

Refrences

Martin Henrion

Principal Analyst, TMR

martin.g.henrion@tmr.qld.gov.au

Jay Pigot

Manager, TMR

jay.z.pigot@tmr.qld.gov.au

Key Academic Projects

Predictive Data Mining Dashboard
June'18 - Nov'18

Queensland Government and Dr Richi Nayak (QUT)
- Development of supervised machine learning and deep learning models for making desired predictions.
- Development of a web application, using DASH, enabling users to use these prediction models using suitable visualizations.

Tableau Dashboard
July'18 - Nov'18

Queensland Government (TMR)
- Worked with Dr Ashish Bhaskar on developing a Tableau Dashboard for the Department of Transportation and Main Roads.

KNIME Metanode for Spelling Correction
Feb'18 - June'18

Risk Insights
- A spelling and grammar detection and correction meta node for KNIME analytics platform.

Automated Security System
Dec'13 - May'14

- A facial recognition-based security system made out of Raspberry Pi and a USB webcam integrated with an Android application.

Youth Outreach Adolescent Community
July'13 - Aug'13

- Indo-US Global classroom collaboration project of Drexel University, Philadelphia and Amity University, was involved in the development of an interactive web portal for YOACAP, using Mezzanine, a Django-based content management system.

Academic Achievements

Dean's List Award - Semester 1 - 2017

Dean's List Award - Semester 2 - 2018

Microsoft Student Partner 2013-17

Academic Societies

President

Amity Microsoft Technology Club

Amity University, India.

Vice-President

Hindu Society
Queensland University of Technology

Academic Volunteer Experience

Volunteer @ Robotronica'17 held at (QUT).

Organized and coordinated Microsoft Techdays @ Noida

Part of the core organizing team for the Annual Amity Youth Festival (AYF'12 and AYF'13).

Part of the core organizing team of Confluence'12 @ Amity University