

# Subham Kumar

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## EDUCATION

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### University of North Carolina at Charlotte

Charlotte, NC

*Masters of Science in Architecture & Information Technology*

*Graduation: December 2022, GPA: 3.78*

- Dissertation: Developing a web-app for Topic Guided thematic Analysis  
Advisor: Wenwen Dou, Ph.D.

## TECHNICAL SKILLS

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**Languages:** Python, JavaScript, Java, C#, C++, SQL

**Web Technologies:** HTML, CSS, JavaScript, Node.js, Express.js, React

**Interface Design Tools:** Figma, Adobe XD, Sketch, Adobe Illustrator, Adobe Photoshop

**ML Packages:** Pandas, NumPy, JAX, scikit-learn, PyTorch, TensorFlow, Keras

**Frameworks:** Flask, React, Django, Streamlit

**Databases:** MySQL, MongoDB (Intermediate)

**Cloud Services:** AWS EC2, Azure, Google Compute, Heroku

**Visualization Tools/Softwares:** AWS QuickSight, Tableau, PowerBI

**Other Tools:** Dockers

## WORK EXPERIENCE

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### UrbanSim Inc.

June 2022 – August 2022

*Computational Design Intern*

*Seattle - WA*

- Worked on a Machine Learning Model using Graph Neural Network (GNN) that learns from Urban Parcel geometry, predicts place types (for e.g- Residential, Commercial, Industrial, etc.), and also predicts building footprint geometry.
- Worked on Machine Learning algorithm using Graph Neural Network (GNN) to capture Growth/Decline of population, income, and household for a given region over a period of time.

### Urban Synergetics Lab

January 2021 – Present

*Research Assistant*

*UNC Charlotte, Charlotte - NC*

- Developed an application for Exploratory data Analysis of Social Media Data and a data Pipeline for exploratory Data Analysis that would help Data Analysts and Social Scientists to understand social media data and can take relevant steps
- Worked on analyzing the relationship between the Cost and Demand of shared Mobility Systems (On-Demand mobility systems).
- Working on the Machine-Learning (Decision Tree Model) that controls Airpurification system using and Microcontrollers (Raspberry Pi).

## MOST RELEVANT AND IMPACTFUL WORK

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- Developed an application for Deception Detection Techniques in jointly embedded Texts and Images.
- Worked on a competition for Determining Transaction Categories Using Machine Learning and Natural Language Processing.
- Full-stack website developed as part of the final project for network-based application development class at UNC Charlotte. Front-end was developed using EJS and MVC pattern to provide dynamic content update fetched from the database. The back end was developed using node js, express, and mongo DB.
- Worked on the development of a Platform for Cyber-Physical interaction between humans using Socket-IO, Java-Script, Node.JS.
- Developed an application for Exploratory data Analysis of Social Media Data and a data Pipeline for exploratory Data Analysis that helps Data Analysts and Social Scientists to understand social media data.
- Worked on the Generative Adversarial Network Plan using Neural Network for Floor Area plan Generation.