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Nicholas Occhipinti

Education

2020–2021 **University of North Carolina at Charlotte**,
Data Science and Business Analytics, Masters Degree.
GPA – 4.0

2012-2014 **Oregon State University**,
Geographic Information Science, Graduate Certificate.
GPA – 3.93

2001-2004 **Kean University**,
Computer Science, Bachelor of Science.

Experience

Nov 2017–Present **Geographic Information Systems Developer**, University of North Carolina at Charlotte.
- Administer ArcGIS Server, Portal and NGINX servers hosting mapping applications supporting Facilities Management operations.
- Maintain the Campus' web map application used by students, staff and visitors to find buildings and services on campus.
- Develop GIS solutions to help groups solve different problems such as creating a utility network to support better data management and setting up maps and database schemas for field data collection of assets.
- Create interactive Tableau dashboards to highlight work request performance metrics for FM.

Aug 2021–Dec 2021 **Data Science Intern**, University of North Carolina at Charlotte.
As part of my Masters program I had an internship with Facilities Management where I used machine learning in the following areas.
- XGBoost regression models to predict the time and cost of a work request to be completed.
- Word2Vec and Deep Learning models to classify the problem type from work request problem descriptions.
- Analyzing the survival probability of equipment used on campus over time.

Apr 2017 – Aug 2017 **Geographic Information Systems Developer**, NYC Department of Education.
- Created and maintained spatial datasets for the New York City school system, consisting of over 1,800 schools and 1.1 million students.
- Maintained an ASP.NET MVC mapping application and related ArcGIS map services and automated GIS tasks using Python.
- Developed a prototype web mapping application as a Proof of Concept using Open Source technology as a contingency plan in the event the city's contract with their current GIS vendor did not get renewed.

Jan 2011 – May 2011 **Assistant Professor**, Rutgers University.
- Taught a course on object oriented programming covering concepts such as classes and inheritance. This program was part of a certification for veterans of Iraq and Afghanistan that provided them tools to start a career in the Information Technology field.

Jun 2007 – Mar 2017 **Geographic Information Systems Specialist**, Mott MacDonald.
- Developed Python scripts for a variety of uses such as FTP image transfer, spatial analysis, creating map books and developing geoprocessing services.
- Developed an ASP.NET MVC mapping application to view and edit data, that played a pivotal role in acquiring new clients.
- Architected a document management system that linked documents to spatial assets in a web-based GIS application.
- Administered a production GIS Server environment to host data for approximately 25 clients.

Projects

2021 **Finding Clusters of NYPD Complaints**, *UNC Charlotte Student Project*.

- Used Neo4J to identify clusters of complaints and a PageRank centrality algorithm to find the most influential locations that are central to other nearby areas where similar offenses occurred.
- An interactive map was integrated into Jupyter notebook using ipyleaflet to show where clusters of complaints are occurring.
- Used graph link prediction machine learning to predict the locations where future offenses will occur.
- Final Project Report

2021 **Analyzing Twitter Data about Popeye's Chicken Sandwich Craze**, *UNC Charlotte Student Project*.

- Used R and the Twitter API to collect tweets about the 2019 Popeye's chicken sandwich release.
- Developed an emoji cloud in Tableau to capture the range of emotions over time
- Created dashboards showing sentiment analysis, topic modeling, and change in retweet volume over time.
- Performed network analysis to study the centrality of tweets about the fights that occurred at Popeyes.
- Final Project Report

2020 **External Camera Project**, *UNC Charlotte*.

- Built a secure application in our GIS Enterprise Portal that allows the Campus police department to view the locations of their external cameras on Campus through a web based viewer and mobile device.
- I also built an application that allowed them to securely edit the camera locations and attributes and attach images to the camera point features.

2020 **ArcGIS Enterprise Upgrade**, *UNC Charlotte*.

- Implemented a complete enterprise upgrade of the campus' GIS technology.
- Upgrading the GIS Server and Portal applications, migrating maps from ArcDesktop to ArcGIS Pro and configuring security best practices by setting up the firewall rules, reverse proxies and Shibboleth authentication.

2019 **Student Visual Analytics Project**, *UNC Charlotte Student Project*.

- Developed an R Shiny application that showcased data about Opioid addiction in the United States.
- Application was interactive and allowed the users to filter by the state and country and select a range of years.
- This was a final project for a Visual Analytics course where our group won best project.
- Final Project Dashboard

2017 **Open Source Technology Proof of Concept**, *NYC Deptartment of Education*.

- Developed a prototype web mapping application as a Proof of Concept using Open Source technology as a contingency plan in the event the city's contract with their current GIS vendor did not get renewed.
- Used GeoServer to connect to an SQL Server Spatial database to publish layers, OpenLayers to consume the OGC WMS and WFS services in a web application and Turf.JS to perform analysis operations.
- Provided a detailed report where I published the technology, methods and findings.

2015 **Pedestrian Crossing Model**, *Mott MacDonald*.

- Worked in Qatar with the Ministry of Transport to analyze a road network and assist with the development of a network model and data visualization tool to find suitable locations to build pedestrian crossings.
- Analysis was related to an infrastructure improvement project to accommodate the high volume of people expected for the 2022 FIFA World Cup.

2011 **Pipeline Risk Model**, *Mott MacDonald*.

- Managed the creation of a geospatial risk model for a natural gas pipeline system spanning two states that determined which pipe segments in their system have the highest probability of failing.
- Collaborated with subject matter experts to develop formulas to calculate the probabilities of failure. Analyzed data for the calculations, ranging from a variety of factors such as pipe segment features, soil data analysis and field survey reports.

Relevant Courses

Classroom Network Science, Visual Analytics, Applied Machine Learning, Business Analytics, Cloud Computing, Consumer Analytics