

# Tomás Ortega Rojas

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## EDUCATION

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**New York University**, Graduate School of Arts and Science, New York, NY May 2022  
*Master of Science in Computer and Information Sciences*  
Relevant Coursework: Big Data Science, Deep Learning Systems, Artificial Intelligence

**Florida International University**, School of Computing and Information Sciences, Miami, FL May 2019  
*Bachelor of Science in Computer Science*  
Relevant Coursework: Databases, Graph Theory, Linear Algebra

## TECHNICAL SKILLS

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**Programming Languages:** Proficient in Java, Python, C/C++, JavaScript and SQL — Familiar with Matlab and PHP  
**Libraries and Frameworks:** Flask, Pandas, Numpy, Matplotlib, Pytorch, Keras, Plotly, ScikitLearn, Hadoop, Spark  
**Tools:** Bash, Git, VirtualBox, Docker, PostgreSQL, MongoDB, Amazon AWS,  $\text{\LaTeX}$

## PROJECTS

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**Texture Synthesis GAN (Python, PyTorch, Jupyter Notebooks)** Sep 2021 - Dec 2021  
*Generative Adversarial Network (GAN), trained to generate different regular textures that can be used in 3D models.*

- Improved the performance of the original model to achieve better textures by using data augmentation

**Ray Tracer (C++, Eigen)** Aug 2021 - Dec 2021  
*Application for rendering 3D meshes and primitive objects such as spheres and rectangles using ray tracing*

- Implemented the ray tracing algorithm from scratch using c++ and Eigen (library for linear algebra).
- Applied an optimization algorithm called AABB Trees to accelerate the rendering of 3D triangle meshes. This dramatically improved the rendering speed for large 3D meshes

**Phishing Website Detection (Python, Scikit-Learn, Web Crawling)** Jan 2021 - June 2021  
*Command Line Application that determines if a website is malicious or not using machine learning.*

- Created a web crawler using python to extract information from a collection of 100,000 websites.
- Trained machine learning algorithms for classifying websites as malicious or legitimate, achieving an accuracy of 95%

**Data Science Workflow Manager (Python, Plotly, Flask)** Jan 2019 - May 2019  
*Web application for building and automating data science pipelines.*

- Designed and Implemented the UX/UI using HTML, CSS and, JS along Plotly for data visualizations.
- Collaborated with a team of graduate students and developed tools to automate data cleaning, passing data to models and visualizing the results.

**GeekText (ReactJS, JavaScript, Flask)** January 2017 - April 2017  
*Web application where users can browse, and purchase books.*

- Developed an API using python and Flask to process the product information and get data from the database.
- Created a React component for displaying information about a selected book along with its rating, and comments.
- Collaborated in a team of 5 and applied software engineering principles along with the scrum agile methodology to complete the project.

## EXPERIENCE

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**Freelancing & Volunteering** Jun 2020 - Present  
*New York City, New York, NY*

- Worked directly with clients documenting requirements, and developing websites for e-commerce and blogging.

**Web Developer Intern** Aug 2019 - Jun 2020  
*GBP Solutions, Miami, FL*

- Implemented web scrapers using Python, BeautifulSoup and Selenium to get real estate data from multiple sources.
- Worked on a web application using Python, Flask, and PostgreSQL for statistical analysis of real state data.
- Developed application to find properties with similar characteristics in a specific geographic location within a specified radius using PostGIS.

**Programming I and II Tutor** Aug 2018 - Dec 2018  
*Florida International University, Miami, FL*

- Analyzed and debugged code with students to provide feedback.
- Applied strong communication skills and problem-solving techniques working with students through programming exercises.