

# DANIEL MALLIA

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<https://dmallia17.github.io> 🌐

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## EDUCATION:

### Hunter College, City University of New York

*Master of Arts in Computer Science* – GPA: 4.0

Awarded January 2023

Thesis: [Towards an Unsupervised Bayesian Network Pipeline for Explainable Prediction, Decision Making and Discovery](#)

*Bachelor of Arts in Computer Science – Summa Cum Laude*, GPA: 4.0

Awarded June 2020

Honors: Salutatorian, Departmental Honors, Dean's List (2018, Fall 2019), Hyman & Bertha Kuras Graduate Scholarship

### Fordham University, Fordham College at Lincoln Center and Graduate School of Arts and Sciences, New York, New York

*Master of Arts in History*, Concentration: Late Modern European History

Awarded August 2014

*Bachelor of Arts in History*, minor in Political Science – *In Cursu Honorum, Magna Cum Laude*

Awarded May 2013

Honors: F.C.L.C. Honors Program, Phi Beta Kappa, Departmental Honors, F.C.L.C. Dean's List, Fordham Dean's Scholarship



## EXPERIENCE:

**Adjunct Lecturer, Hunter College, CUNY**, New York, New York

8/2023 – 12/2023

- Taught computer science minor capstone course, and recitations for discrete math and an introductory software course using C++

**Graduate Research Assistant, Research Foundation CUNY**, New York, New York

5/2021 – 12/2022

- Developed a Bayesian network-based pipeline in R to predict and prevent preterm birth, as a member of the [DAIR Lab](#)
- Contributed to papers on [preeclampsia prediction](#) and [dataset preparation](#); part of winning team for a [NICHD Data Challenge](#)

**Software Engineer Intern, Geopipe**, New York, New York

1/2020 – 8/2020

- Engineered and trained deep learning models in Keras and TensorFlow for detecting a category of “roof clutter and street furniture”
- Implemented novel loss functions and visualizations for contending with class imbalance
- Developed Python scripts for generation and review of image datasets

**Lab Member, Computer Vision and Graphics Laboratory, Hunter College**, New York, New York

6/2019 – 8/2021

- Created object detection systems in Python with the OpenCV library, for use on the lab robot, running ROS on Ubuntu

**College Assistant, Department of Computer Science, Hunter College**, New York, New York

8/2018 – 5/2019

- Supported discrete mathematics students: assisted with recitations, proctored exams, graded assignments; tutored

**Paralegal, McLaughlin & Stern, LLP**, New York, New York

4/2015 – 10/2017

- Managed lifecycle of legal documents; conducted research, sensitive inventories, and data analysis projects for employment cases



## PROJECTS:

- [Cyclistic Bike-Share Analysis](#) (Google Data Analytics Course Capstone), in R using tidyverse packages: September 2023
  - Performed a full process in R notebook (data cleaning, analysis and visualization) to develop business recommendations
- [Easy21](#), in Python implemented from scratch: February 2023
  - Solution to David Silver's Easy21 reinforcement learning assignment with environment, control algorithms and plotting
- [Modeling and Simulation course final project](#), team of 2, in Python using the Mesa package: December 2022
  - Agent-based simulation of outdoor cats to estimate population and behavioral statistics, featuring real time visualization
- [FeudalAI \(AI course project\)](#), team of 2, in Python implemented from scratch: April-May 2022
  - Feudal board game as a terminal application, with a script for trialing AI agents and viewing game replays
  - Local- and tree-search based gameplay agents, particularly Monte Carlo Tree Search with parallelized, truncated playouts
- [Computational Vision course final project](#), team of 3, in Python using the OpenCV package: May 2020
  - Implemented a stereo reconstruction algorithm for dense reconstruction of road surfaces, evaluated on KITTI stereo data



## SKILLS & CERTIFICATIONS:

- Python and R (strong); C and C++ (intermediate); SQL (PostgreSQL) and Haskell (basic)
- Experience with computer vision, NLP, ML and robotics libraries: OpenCV, Trax, Pandas, Scikit-Learn, Keras, TensorFlow, ROS
- Proficient in Object Oriented (OOP) and Functional (FP) Programming; basic experience in parallel programming in C with MPI
- Capable with Unix-based systems (Linux and macOS), Git, Jupyter Notebook, Microsoft Excel, Google Sheets and Tableau
- Basic experience with Docker and Amazon Web Services (AWS) (EC2, S3)
- **Certifications:** Google Data Analytics Specialization; DeepLearning.AI Natural Language Processing Specialization