Simon **Warchol**

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Education

Harvard John A. Paulson School Of Engineering And Applied Sciences   *Cambridge, MA*

MASTER OF ENGINEERING IN COMPUTATIONAL SCIENCE & ENGINEERING   *Sep. 2019 - May 2021 (Expected)*

- 4.0 / 4.0 GPA

Tufts University   *Medford, MA*

BACHELOR OF SCIENCE   *Sep. 2011 - May 2015*

- Magna Cum Laude
- Major: Computer Science; Minor: Economics

Skills

Languages	Python, Javascript, Java, C++, C
Back-End	Express, Flask, Spring
Front-End	Angular, D3
Data Science	Tensorflow, PyTorch, Dask
DevOps	AWS, Docker, Kubernetes

Experience

Harvard University   *Cambridge, MA*

FELLOW AND GRADUATE STUDENT RESEARCHER, VISUAL COMPUTING GROUP   *Jan. 2020 - PRESENT*

- Research visualization and analysis of biomedical data.
- Develop CyCIF Viewer, a flexible and scalable application for the analysis and display of multiplexed cell tissue data.
- Collaborate with pathologists and cell biologists in the Laboratory of Systems Pharmacology at Harvard Medical School.

Bullhorn, Inc.   *Boston, MA*

SOFTWARE ENGINEER   *Jul. 2018 - Aug. 2019*

- Developed "Sync," an Express NodeJS web application that integrates applicant tracking systems and vendor management systems.
- Created Angular dashboards to display critical information to customers using Chart.js and the Google Maps API.
- Created a work controller to handle high-volume API requests and predicatively scale servers using PM2.

DEVOPS ENGINEER   *Nov. 2017 - Jul. 2018*

- Implemented Netflix Spinnaker continuous delivery platform to deploy Bullhorn's Docker-based applications to Kubernetes clusters, drastically increasing scalability and streamlining the delivery pipeline.
- Created test and build tools in Jenkins using Apache Groovy and Python.

TECHNICAL OPERATIONS ENGINEER   *Nov. 2015 - Nov. 2017*

- Created a suite of customer engagement reports in Microsoft Reporting Services to help our Product and Customer Success teams understand how users interact with our application and identify at-risk clients.
- Developed Java Web Applications built on the Spring Framework for our Professional Services team, adding additional functionality to the Bullhorn ATS at the request of our largest customers.

Visual Analytics Laboratory at Tufts   *Medford, MA*

RESEARCH ASSISTANT   *Sep. 2014 - Dec. 2014*

- Worked in conjunction with a team at the University of Michigan to analyze an extensive data set of infographics to determine which factors yield a more effective visualization.

Teaching

Harvard John A. Paulson School of Engineering and Applied Sciences   *Cambridge, MA*

TEACHING FELLOW FOR AC207: COMPUTING FOUNDATIONS FOR COMPUTATIONAL SCIENCE   *Aug. 2020 - PRESENT*

- Teaching Fellow for a graduate computer science and applied math course.
- Teach weekly sessions regarding the development of scientific python packages in addition to office hours, assignment creation, and grading.

Tufts University Department of Computer Science   *Medford, MA*

Teaching Assistant for COMP15: Data Structures   *Jan. 2014 - May 2015*

- Assisted Data Structures students in their understanding of course concepts, including sorting algorithms, hashing, trees, stacks, queues, and linked lists.
- Helped students plan out and debug course assignments and projects written primarily in C++.

Leadership

Harvard University Graduate School of Arts and Sciences Student Council   *Cambridge, MA*

Department Representative   *Jan. 2020 - PRESENT*

- Represent the Institute for Applied Computational Science and Computational Science & Engineering students on the Graduate Student council.

Baseball Analysis at Tufts   *Medford, MA*

President & Treasurer   *Jan. 2012 - May 2015*

- Performed extracurricular statistical baseball research and data analysis.
- Visualized the results of these analyses and present them to fellow Sabermetricians and MLB executives.
- Compete in the SABR Analytics Conference Case Competition as part of Tufts' Baseball Analysis team.

Projects

CyCIF Viewer

HTTPS://GITHUB.COM/LABSYSPHARM/CYCIF_VIEWER

- A flexible and scalable application for the analysis and display of multiplexed cell tissue data.
- Developed between the Visual Computing Group at the Harvard John A. Paulson School Of Engineering And Applied Sciences and the Laboratory of Systems Pharmacology at Harvard Medical School.

Bias in NLP Embeddings

HTTPS://WARCHOL.MEDIUM.COM/BIAS-IN-NLP-EMBEDDINGS-B1DABB8BBE20

- Assessing bias in NLP embeddings and transformer-based models.
- Using fine-tuning on BERT to mitigate this bias.

Population prediction via CNNs and geospatial imagery

HTTPS://GITHUB.COM/CHICKERT/GEOSPATIAL_ANALYSIS

- Using Google Earth Engine, satellite imagery, and Convolutional Neural Networks to predict the population of US Census Tracks.

Parallel Graph Algorithms

HTTPS://GITHUB.COM/KAELANELSON/CS205-FINAL-PROJECT

- Hybrid parallel implementations of graph algorithms in MPI and OpenMP.

Visualizing Mass Incarceration

HTTPS://CS171-FINAL-PROJECT.GITHUB.IO/FINAL-PROJECT/

- Visualizing mass incarceration and the school-to-prison pipeline in the US with D3.

Hidebar

Chrome Extension

- Lightweight chrome extension written in JavaScript and JQuery to dynamically hide and display Reddit sidebars depending on window dimensions and subreddit styling.

DMachine

HTTPS://GITHUB.COM/SIMONWARCHOL/DMACHINE

- Visualizing NBA team & player defense using Processing.js.

NBA Height & Weight Trends

HTTP://SIMONWARCHOL.GITHUB.IO/NBA-HEIGHT-WEIGHT

- Scraping Basketball-Reference with Beautiful Soup and visualizing the trends in these data with D3

Honors & Awards

Tufts University, Dean's List: Fall 2011, Spring 2012, Spring 2013, Fall 2014, Spring 2015   *Medford, MA*