Camelia D. Brumar

Visual Analytics Lab @ Tufts
Medford, MA 02155
(774) 312 8989
camelia_daniela.brumar@tufts.edu
kamibrumi.github.io/

Education

May 2020 - Present
Ph.D. Computer Science, *Tufts University*, Advisor: Dr. Remco Chang.
Relevant Coursework: Introduction To Machine Learning, Visualization Seminar, Web Engineering.

Graduation date: May 2020
B.S. Mathematics, GPA: 3.684, *University of Maryland, College Park (UMD)*, Advisor: Dr. Amitabh Varshney.
Relevant Corsework: Data Visualization, Data Analytics and Statistical Learning, Computer Graphics, Object-Oriented Programming, Geometry for Computer Applications, Probability Theory I, Numerical Analysis of Differential Equations, Abstract Algebra, Affine and Euclidean Geometry, Projective Geometry.

Publications

2020
A Log-Rectilinear Transformation for Foveated 360-degree Video Streaming, *IEEE VR - TVCG 2021*, Conditionally Accepted.
David Li, Ruofei Du, Adharsh Babu, Camelia D. Brumar, Amitabh Varshney.

2019
Application of Approximate Matrix Multiplication to Neural Networks and Distributed SLAM, *IEEE HPEC 2019*, Co-first author.
Brian Plancher, Camelia D. Brumar, Iulian Brumar, Lillian Pentecost, Saketh Rama, David Brooks.

Work Experience & Research

May 2020 - Present
Graduate Research Assistant, *Visual Analytics Lab*, Tufts University, Supervisor: Dr. Remco Chang.
- Designing and building a visualization in d3.js for a paper focused on Anomaly Detection in Machine Learning. Paper to be submitted in December 2020.
- Research assistant on NSF Collaborative Research: Converging Genomics, Phenomics, and Environments Using Interpretable Machine Learning Models [*read more*]. Managing two undergraduate research assistants.
- Research assistant for The Walmart Foundation, designing an experiment on gamifying a shopping website.

October 2019 - May 2020
Undergraduate Research Assistant, *Graphics and Visual Informatics Laboratory at UMD*, College Park, MD, Supervisor: Dr. Amitabh Varshney.
- Worked on the paper "*A Log-Rectilinear Transformation for Foveated 360-degree Video Streaming,*", which was submitted and conditionally accepted to IEEE VR 2020 conference.
- Worked on developing a user interface for creating animations starting from an individual image (photograph or painting). Reproduced results observed in the paper "*SinGAN: Learning a Generative Model from a Single Natural Image*".

May 2019 - August 2019
Software Engineering Intern, *Bose Corporation*, Framingham, MA, Supervisor: Matthew Jannace.
- Developed a demo Android App and a Python Dockerized microservice in the Bose cloud. Prototyped a new Dynamic App UI experience by fetching dynamic resources and configuration from the cloud to display them in a mobile app.
- Worked with the automation team on a research project about how to port the code that automates the UI tests for Bose Music App from Python to Kotlin.

March 2019 - July 2019	**Undergraduate Research Assistant**, *Worcester Polytechnic Institute*, Worcester, MA, Supervisor: Dr. Zhongqiang Zhang.
	○ Worked on Rational Krylov subspace approximation methods applied to partial differential equations. Implemented the Randomized SVD for Image Processing and worked on implementing the exponential integrator method for the heat equation in 1D and 2D, using the functional matrix approach to evaluate the exponential matrix.

Other Projects

Summer 2020	**Dota 2 Counters Project**, *Major League Hacking Hackathon*.
	Built a force directed graph visualization tool using d3.js called "Dota 2 Counters". It has the objective of not only instructing what heroes are effective against other heroes but more importantly the reason of such relations. This project was a 3rd place winner at the Data Day Grind hackathon organized by Major League Hacking.
Summer 2017 & 2018	**Know Yourself Android App**, *Personal Project*.
	Developed a stress-prediction wearable application based on Random Forests with the goal of predicting the well being of its user as correlated with the day of the week, hour of the day, number of hours slept and as related to the weather (temperature, pressure, humidity, etc.) and other variables.
Spring 2019	**The Cite Site**, *CS 480X Data Visualization*.
	Built a treemap visualization in d3.js that aims to provide an informative and exploratory way of presenting information about Wikipedia articles, links and citations.
Fall	**Alexa NGO Donator**, *HackUPC Winter Hackathon*.
	Developed an app for the Amazon Alexa which automatically makes donations to an NGO via Paypal conditioned on human behavior.

Awards & Membership

Summer 2020	**Major League Hacking Prize**, *Data Day Grind Hackathon*.
	Awarded the Third Prize Overall (200+ participants, 50+ projects).
Fall 2019 - Spring 2020	**Dean's List**, *University of Maryland, College Park*.
Fall 2018 - Spring 2019	**Dean's List**, *Worcester Polytechnic Institute*.

Skills

Programming.
Python • JavaScript • scikit-learn • pandas • HTML • CSS
Familiar.
d3.js • Java • Android • Bash • Matlab

Mentoring

October 2020 - Present	**Zeyu Chang**, *Tufts 2022*, VALT Graduate Research Assistant.
October 2020 - Present	**Anna W. Yuen**, *Tufts 2021*, VALT Undergraduate Research Assistant.
May 2020 - September 2020	**Kate Hanson**, *Tufts 2021*, VALT Undergraduate Research Assistant.

Service & Activities

September 2020 - Present
Harvard Innovation Labs, *Member of The Venture Program*.

August 2020 - Present
Association for Computing Machinery, *Student Member*.

August 2020
SIGGRAPH 2020 Conference, *Student Volunteer*.

Languages

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Romanian (native), Spanish (native), Catalan (native), and English (fluent).