TARIK CRNOVRSANIN (RESUME)

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EDUCATION

University of California, Davis (2019)
PhD Computer Science
Area: Data visualization, Networks
Advisor: Dr. Kwan-Liu Ma
☆ Awarded Best Graduate Researcher

University of California, Davis (2011)
MS Computer Science
Area: Data visualization, movement data
Advisor: Dr. Kwan-Liu Ma

University of California, Davis (2008)
BS Computer Science

SELECTED EXPERIENCE

Khoury Data Vis @ Northeastern University — PostDoc → Senior Software Engineer Jan 2021 – Present
- Develop Interactive Visualization, techniques and algorithms using D3, Svelte, React, JS, Python, and MongoDB.
- Coauthored eight accepted papers at top conferences (CHI, VIS), with another three under review.
- Worked on predicting drone behavior using machine learning through LSTM
- Mentored students across many sub-disciplines: Multi-layered networks, 3D printing, cyber security, and explainable AI

Department of Computer Science, University of California, Davis —Lecturer 2019
- Developed lectures, assignments, & taught an 8-week course on Intro to Programming using Python to over 50 students

Out of Darts (Remote) — 3D Model Designer, Web Developer, Consultant May 2017 – Present
- Research and design new 3D printed products from concept to full production, such as the OOD Jupiter using Fusion 360. (combined 4+ M views on YouTube)
- Designed over 70 products, including injection-molded products and nine blasters, using Fusion 360.
- Develop visual tools in Shopify to allow shoppers to customize and view their purchases easily. (>90% product listings)

VIDI Labs, University of California, Davis — Graduate Student Researcher Oct 2009 – Jun 2019
- Conducted studies on best practices and designed visualizations, algorithms, and systems on various topics, including graph layouts, radio signal data, dynamic network data, and movement. ☆ Awarded Best Graduate Researcher
- Published five (three first-author) papers during my MS and 11 (seven first-author) papers during my Ph.D.

Nokia Research Lab — Trainee 6 Apr – May 2009
- Created a contextual tourist map on the web using Google Maps, JavaScript, Python, and SQL. ☆ US Patented

SELECTED PUBLICATIONS

Investigating the visual utility of differentially private scatterplots. L. Panavas, **T. Crnovrsanin**, J.L. Adams, J. Ullman, A. Sargavad, M. Tory, and C. Dunne. *IEEE Transactions on Visualization and Computer Graphics—TVCG.* 2023.
Built a React, D3, and JS app for running user studies and mentored the first student.

Staged Animation Strategies for Online Dynamic Networks. T. Crnovrsanin, Shilpika, S. Chandrasegaran, and KL. Ma. *IEEE Trans. Visualization and Computer Graphics. In Proc. IEEE VIS 2020*.
Created staged animation framework and the accompanying study using OpenGL, C++, and QT.

What Would a Graph Look Like in this Layout? A Machine Learning Approach to Large Graph Visualization. OH. Kwon, **T. Crnovrsanin**, and KL. Ma. *IEEE Trans. Visualization Computer Graph, 24(1), 2018.*
Contributed key techniques, mentored student author, and co-wrote the paper

An Incremental Layout Method for Visualizing Online Dynamic Graphs. T. Crnovrsanin, J. Chu, and KL Ma. *Conf. on Graph Drawing and Network Visualization, 2015.* ☆ Best Paper (Top 1)
Wrote novel incremental layout algorithm using OpenGL, C++, and QT.

SKILLS

Coding: Javascript, Python, C++, OpenGL. **GPQGPU:** OpenCL. **Web Client:** WebGL, Javascript, React, Svelte, Babylon.js, Three.js, Shopify. **DMBS:** MYSQL, PostgreSQL, MongoDB**. ML:** Object Detection and Vis, Unsupervised learning(UMAP, TSNET) and Vis. **Image and Video Authoring:** Photoshop, Camtasia, PowerPoint, Illustrator. **Modeling and Design:** Fusion 360, 123Design, Maya.