Daniel Nakhimovich

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Education

Rutgers University — New Brunswick, NJ
Doctor of Philosophy in Robotics; GPA: 3.90 — *Sept 2019 – May 2024*

The Cooper Union — New York, NY
Bachelor of Engineering in Electrical Engineering; GPA: 3.55 — *Sept 2015 – May. 2019*

Experience

DIMACS — Piscataway, NJ
Undergraduate Researcher — *Summer 2018 – 2019*

- **Support**: This work was partially supported by the Computer-Human Graph TeleDiscovery grant (IIS-1563971) under the direction of James Abello.
- **k-connectivity**: k-connectivity is a connectivity measure for graphs. Designed two algorithms for finding approximations of minimum seperating sets of a graph in order to perform efficient graph decomposition for data visualization.
- **Graph Peeling**: Graph Peeling is the iterative process of removing vertices from a graph. Explored properties of various graph peeling techniques and designed a new peeling algorithm (wave decomposition) in order to decompose very large graphs efficiently.

PulsePoint — New York, NY
TechOps Intern — *Summer 2017*

- **QPS Monitoring**: QPS stands for queries per second. Optimized application metric collection/alerting to reduce the false positve rate of QPS drops.
- **System Integrity**: Automated the backup and data verification of large (~100GB) databases.

Conceptheca — Fair Lawn, NJ
Mobile Application Developer — *2015 – 2016*

- **Blood-loss**: A mobile application on Android/iOS for doctors that calculates the maximum allowable blood-loss that a patient can undergo before reaching critical condition
- **JAM Fractals**: A mobile game on Android OS that allows a player to mix ingredients to form seemingly random and chaotic fractal images
- **Sepsis Clock**: An iOS application to help doctors keep track of the time and completion progress of the procedures to treat patients with septic shock

Projects

skEye Net: Wireless eye tracking / gaze estimation headset that works in realtime; 1^{st} place at HackCooper 2018

OpenSesame: Open source cryptographic co-processor implemented on an FPGA

pass2act: Passive to active sentence transformer built using spaCy's dependency tree parser

biboch: Bitboard checkers implementation with an AI that performs a fast alpha/beta search on the game tree

8-bit processor: Custom 8-bit instruction set architecture written in verilog

Publications

Pushing the Boundaries of Asymptotic Optimality in Integrated Task and Motion Planning, by Rahul Shome, Daniel Nakhimovich, and Kostas E. Bekris, in *The 14th International Workshop on the Algorithmic Foundations of Robotics*, 2020.

Graph Waves, by James Abello and Daniel Nakhimovich, in *The 3rd International Workshop on Big Data Visual Exploration and Analytics with EDBT/ICDT*, 2020.