

SUMMARY

Innovative DevOps engineer with a strong Linux background and 4+ years of experience designing, automating and managing mission critical infrastructure deployments by leveraging configuration management tools and other DevOps processes. Expert in scripting using python with an emphasis on real-time, high speed data pipelines and distributed computing across networks.

EDUCATION

- **NYU Polytechnic School of Engineering** Brooklyn, NY
Master of Science in Telecommunication Networks *Aug. 2012 – May. 2014*
Thesis - CitySynth: Imaging with a Network of Devices

EXPERIENCE

- **NYU CUSP** Brooklyn, NY
Associate Research Scientist *May 2015 - Present*
Assistant Research Scientist *June 2014 - May 2015*
 - **Dockkeeper:** Developed a scalable and secure container scheduling and monitoring tool that leverages the docker ecosystem and prometheus for provisioning services on physical hosts. This helped eliminate the VM license fees of over \$35,000 per year and optimizing the efficiency of hosts by over 55%.
Deployed a multi-node kubernetes cluster for exposing load-balanced web applications on the web.
 - **Vizwall:** Deployed a 27 screen video wall using a cluster of networked raspberry Pi's enabling researchers to interpret their visualizable data, evaluate their models and make better decisions, while keeping the whole price to 1/8 th of that of a commercial solution.
 - **UOInfra:** Architected the NYU/CUSP Urban Observatory's multi-site physical infrastructure consisting of multiple dense compute and storage nodes comprising of over half a petabyte of storage space, provisioned for multi-user mini-HPC environments, using Ansible and Packer.
Deploying VMs using Virtualbox and its API for ingesting data streams from multitudinous sensor deployments.
 - **SONYC:** Developed a secure machine critical IoT platform and implemented CI/CD framework for deploying and maintaining over 100 urban noise monitoring sensors in NYC. This project has won the \$ 4.6 Million CPS frontier award from NSF. An innovative lifeline beacon based approach helped reduce the time to revive sensors in the field from ~2 week per node to less than 1 hour per node, improving the efficiency of the team and the sensor network.

PROJECTS

- **CUIC:** Open source python library for interfacing with GigE vision broadband, thermographic and hyperspectral cameras using advanced message queuing protocol to acquire images and perform pre-processing on-the-fly.
- **UCSLHUB:** Developed a resilient and scalable back-end infrastructure using docker swarm, jupyterhub and keycloak for hosting the CUSP's UCSL bootcamp which will be accessed by hundreds of students every year.

PUBLICATIONS

- **A Hyperspectral Survey of New York City Lighting Technology, 2016** *Sensors, 16, 12*
Using a scanning, single channel spectrograph to identify the lighting technologies in use in the NYC
- **Hypertemporal imaging of NYC Grid Dynamics, 2016** *BuildSys '16*
Demonstrating the concept of capturing the 120 Hz flicker of lights across a NYC skyline as a proxy to indicate the health of distribution transformers
- **Dynamics of Urban Lightscape, 2015** *Information System, 54, 115*
Using a network of cameras to understand *the pulse of the city*

TEACHING EXPERIENCE

- **Urban Computing Skills Lab at NYU** *2014 - 2019*
Instructor for summer boot camp course on introduction to Python and SciPy packages.
- **Advanced Topics in Urban Informatics at NYU** *2016, 2017, 2019*
Instructor for a 3 week intensive course on topics including Wireless Sensor Networks, IoT and Microservices
- **Advised NYU/CUSP graduate student Denis Khryashchev** *2015 - 2016*
project: *Social Pattern Detection by scanning GSM downlink spectrum*