[**Mohit Sharma**](https://sharmamohit.com/)Email : [mohitsharma44@gmail.com](mailto:mohitsharma44@gmail.com)

[https://www.sharmamohit.com](https://sharmamohit.com/)

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*](https://sharmamohit.com/project/citysynth/)

# 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](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1544753) 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

## [Persistent Hyperspectral Observations of the Urban Lightscape](https://ieeexplore.ieee.org/document/8646419) *IEEE GlobalSIP*, 2018

Trained a supervised classifier to automatically determine location of light sources on persistent hyperspectral imaging of the New York City urban lightscape, with *∼*7.2 x 10*−*4 µm spectral resolution, surveyed over 25 consecutive summer nights over a 6 minute

time resolution using Dockkeeper infrastructure.

## [A Hyperspectral Survey of New York City Lighting Technology,](http://www.mdpi.com/1424-8220/16/12/2047/html) 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,**](http://dl.acm.org/citation.cfm?id=2993570) **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,**](http://www.sciencedirect.com/science/article/pii/S0306437915001167) **2015 *Information System*, 54, 115**

Using a network of cameras to understand *the pulse of the city*

# Teaching Experience

* [**Urban Computing Skills Lab**](https://sharmamohit.com/#teaching) **at NYU *2014 - 2019***

Instructor for summer boot camp course on introduction to Python and SciPy packages.

* [**Advanced Topics in Urban Informatics**](https://sharmamohit.com/#teaching) **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*](https://www.overleaf.com/read/ssrzkqkznpkw)