

# Jules Berman

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Portfolio: <https://julesberman.github.io>

## Education

B.S. in Computer Science, New York University. Spring 2017 GPA: 3.7  
M.S. in Scientific Computing, New York University. Spring 2022 GPA: 3.9

## Experience

### Flatiron Institute

05/2021 – Current

Research Analyst, Center for Computational Neuroscience

Wrote original research paper on the use of point cloud representations of neurons for improving existing segmentations.

Assisted lab members and PhD students in the use of high-performance GPU clusters. Included workflow improvements, code optimization, and implementations of multi-threading.

Organized lab group meetings. Scheduled weekly speakers on topics in machine learning and computational neuroscience.

Summer Research Assistant, Center for Computational Neuroscience

Assisted in the development of an automated pipeline for neuron segmentation. Components included data augmentation, UNet affinity map prediction, watershed, and agglomeration.

Researched the possible use of 3D Vision Transformers to replace UNets as backbone of our segmentation pipeline.

### Bloomberg LP

04/2018 – 04/2021

Software Engineer, Global Infrastructure Team

Maintained the full stack of a company-wide infrastructure procurement web application.

Designed and built a multi-threaded backend validation engine which processed terabytes of data, ensuring it adhered to a complex set of rules regarding data consistency and integrity.

Built a machine learning model which used historical data to project future infrastructure usage.

## Papers

*Bridging the Gap: Point Clouds for Merging Neurons in Connectomics*  
J. Berman, J. Wu, D.B. Chklovskii.

Submitted, MIDL 2022

## Projects

*Review: Deep Learning for PDEs*

Review paper surveying current methods for using Deep Learning to solve PDEs.

*Meta-Embeddings for Unsupervised Protein Models*

Research paper showing that unsupervised protein models learn complementary embeddings.

## Skills

*Tech:* Python, NumPy, Pytorch, Matlab, Chebfun, SLURM, Javascript

*Life:* Piano, oil painting, long-distance running