Jackson Maxfield Brown

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Experience

Backend Engineer / Numina (numina.co)
October 2020 - Present, Remote - Seattle, Washington, USA

Designing, building, and optimizing the back-end data storage and processing systems, and creating systems and tools for urban space use analysis.

- Designing data flows and back-end systems to support data processing and delivery needs at scale.
- Developing and optimizing methods for managing time-series, sensor, and user data.
- Collaborating with urban and transportation planners and other external business partners on new technology development.

Research Engineer / Allen Institute for Cell Science (allencell.org)
November 2017 - October 2020, Seattle, Washington, USA

Created reproducible, scalable, and robust scientific image processing pipelines and tooling for large dataset management while additionally contributing to and setting broader research goals for the institute.

- Established reproducibility standards for computational biology pipelines and data.
- Led the development of many image and feature analysis pipelines run and maintained at the institute.
- Assisted scientists in development of new machine learning methods and analysis tools.

Research Assistant / University of Washington
June 2017 - October 2017, Seattle, Washington, USA

Assisted Dr. Nicholas Weber in researching methods to encourage hyper-local civic engagement.

- Built a pipeline to gather and process scattered government resources.
- (Ongoing) Directing a core team of six as they contribute to further development of the tools and services.

Education & Interests

Bachelor of Science / University of Washington - Informatics
September 2013 - June 2017, Seattle, Washington, USA

Scientific software development with a focus on information retrieval and processing systems. Deeply interested in government utilities and information access which can apply to both elected official accountability or pure utilities of the government such as transportation and urban planning systems.

Papers

DSDB: Reproducible Computational Modeling

Workshop on Research Objects - 2019

Jackson Brown and Nic Weber

https://doi.org/10.5281/zenodo.3337374

Managing Manifests and Distributing Datasets

Workshop on Research Objects - 2019

Jackson Brown

https://doi.org/10.5281/zenodo.3382258

Packaging Municipal Legislative Event Data for Reuse and Exchange

Workshop on Research Objects - 2019

Jackson Brown and Nic Weber

https://doi.org/10.5281/zenodo.3380592

Cell states beyond transcriptomics: integrating structural organization and gene expression in hiPSC-derived cardiomyocytes

preprint

Gerbin, Grancharova, Donovan-Maiye, Hendershott, et al.

https://www.biorxiv.org/content/10.1101/2020.05.26.081083v1

Software & Data

AICSImageIO

Jackson Brown, Jamie Sherman, Madison Bowden, Dan Toloudis

Delayed chunked n-dimensional image reading, metadata conversion, and image writing for Microscopy images in pure Python. The library standardizes the many disparate image reading libraries while additionally allowing the user to scale to any size image and spread the memory and processing across an HPC cluster.

Code Repository: https://github.com/AllenCellModeling/aicsimageio

ACTK (Automated Cell Toolkit)

Jackson Brown, Rory Donovan-Maiye, Gregory Johnson

A pipeline to process field-of-view microscopy images to generate feature and model ready training data for each cell. Products of this pipeline can be found in the Cell Feature Explorer.

Code Repository: https://github.com/AllenCellModeling/actk
Produced Data: https://open.quiltdata.com/b/allencell/tree/aics/actk/master/

Council Data Project

Jackson Brown, To Huynh, Issac Na, Emily Gilles, Katlyn M.F. Greene, Nic Weber

A collection of libraries that are used to retrieve, process, package, and access municipal government event and legislative data.

Code Repository: https://github.com/CouncilDataProject/
Produced Data: https://councildataproject.github.io/seattle/#