Daniel M. Rubin

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Education

Northeastern University, Boston, MA
PhD Physics 2012 - 2018

University of California, Davis, CA
BSc Physics, 2008 - 2012

Languages and Tools

Python, SQL, Terraform, Shell Scripting, Avro, JsonSchema, Snowflake, Looker, dbt, MySQL, postgres, Mongodb, Unix administration, docker, AWS Products Including (S3, RDS, Kinesis, EC2, ECS)

Experience

CarGurus, Principal Data Engineer, 2021 - Present
Senior Data Engineer, 2019 - 2021

- Re-architected a coupled extract and load pipeline into separate scalable components, reducing code complexity and decreasing effort to develop new integrations.
- Migrated self-service reporting and analytics tools to a modern platform centered on data-build-tool (dbt), to ease barrier to entry for less technical users.
- Took ownership of a client side tracking platform(Snowplow Analytics), processing 100M+ events per day. Owned all aspects and infrastructure post event creation to ingestion into data warehouse.
- Developed guidelines and best practices for direct product integrations with the data warehouse.
- Served as a member of the CarGurus Server Side Council, a cross-functional group overseeing and providing guidance on the adoption of new tools and technology for the entire Engineering organization.

Data Engineer, 2018 - 2019

- Developed integrations for a scalable ELT pipeline from both internal and external sources into a Snowflake data warehouse.
- Maintained and expanded observability for cloud based distributed architecture for a large scale ELT pipeline, processing 100s of GB per day.
- Established a center of excellence for efficient and maintainable analytical SQL.
- Translated legacy cloud infrastructure to into infrastructure-as-code (terraform) for ease of maintainability.

NEU Laboratory for Graphene Research, Graduate Research Assistant, 2013 - 2018

- Designed, constructed, calibrated, and deployed optoelectronic characterization instrument used in material characterization with LabView and Python.
- Utilized quantitative computational models for optical spectroscopies of nanomaterials to validate and analyze experimental data.
- Modeled electronic structure and properties of semiconductor materials with DFT based simulation packages.
- Simulated nuclear processes in various materials using MCNP to model ionizing radiation in the design of radiation detection systems.
- Managed and maintained a Raman spectrometry user facility with users in the Physics, Chemistry, Mechanical Engineering, and Chemical Engineering departments.

Patents

Tunable and Reconfigurable Atomically Thin Heterostructures
Anthony Vargas, Fangze Liu, Christopher Lane, **Daniel Rubin**, Ismail Bilgin, Matthew DeCapua, Arun Bansil, Swastik Kar. *U.S. Patent Application No. 62/378,345* (August 2016)

Ion and Radiation detection Devices Based on Carbon Nanomaterials and Two-Dimensional Materials
Ji Hao, Swastik Kar, Yung Joon Jung. **Daniel Rubin** *Intl. Patent Application No. US 2017/051032* (September 2017)