Matanya Loewenthal

Recent Graduate pursuing Software Development Engineering

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EDUCATION

UNIVERSITY OF MARYLAND | COLLEGE PARK — *College Park, Maryland*
BS in **Computer Science** — *Aug 2017 - Dec 2021*
Relevant Coursework: **Operating Systems**, Intro to Compilers, **Software Engineering**, Data Structures
Awards: **1st** at CampusKey Hackathon '21, 2nd at JHacks Hackathon '19
Founder and **President** (2017 - 2019) of the **Linux Club at University of Maryland, College Park**

EXPERIENCE

MARYLAND INFORMATION AND NETWORK DYNAMICS LAB (MIND LAB) — *College Park, Maryland*
Undergraduate Researcher, Department of Computer Science — *Aug 2021 - Present*

- ***Data Engineering:*** Built Python data pipeline 'pypline' for processing almost 2 Terabytes of data in a 7 module chain. Pypline is data and language agnostic, with a speedup of over %850. Dynamic multiprocessing works for any module in any language on any platform, including Apache Kafka.
- ***Research:*** Developed the concept of Deterministic Causal Programming with First-Order Functions. Implemented functional prototype in Python and documented findings in an exploratory paper.

(Python, Jupyter Notebook, R, Bash, Kafka, Documentation, Design Patterns)

NELNET INC. — *Denver, Colorado*
Intern, IT Analytics - Desktop Support — *Jun 2021 - Aug 2021*

- ***DevSecOps:*** Maintained hybrid cloud environment (legacy mainframe, distributed servers, and cloud). Developed automated routines to streamline DevOps tasks for user management. Protected sensitive customer data and secure workspaces by following federally mandated protocols.
- ***Software Engineering:*** Prototyped CampusKey Eventer which extended the CampusKey app to simplify event registration and enable event-traffic visualizations with heat maps. Prototyped VoiceToMap to automate call center data-entry and lookup tasks, and reduce labor overhead.

(Citrix Virtual Workspaces, Distributed & Edge Computing, Agile Methodologies)

JOINT INSTITUTE FOR LABORATORY ASTROPHYSICS (JILA) — *Boulder, Colorado*
Intern, Lab Assistant — *Mar 2017 - May 2017*

- ***Opto-Mechanical Installation:*** Assisted Dr. Josh H. Baraban, Ph.D., with research in the JILA Ye Group lab and with the CU Boulder Chemistry department on an Optically Accessible Pyrolysis Microreactor (doi: 10.1063/1.4939459), and with Laser-comb Molecular Spectroscopy (doi: 10.1364/OE.27.001911)
- ***Systems Integration:*** Programmed the FLIR Lepton to connect with data collecting and processing software for real-time analysis of pyrolysis microreactor effectiveness and efficiencies.
- ***CAD:*** Designed mounting and shielding for FLIR Lepton and PureThermal board for lab environments.

(Python, Matlab, Autodesk Fusion 360, IoT Devices)

PROGRAMMING, OPERATING SYSTEMS, AND IOT PROFICIENCIES

Python, Rust, C, Java, x86 Assembly, Racket (LISP), Bash Scripting, Git(Lab | Hub)
AWS (**EC2**, RDS, **Lambda**, MinIO, Kubernetes), Google Cloud, Travis CI/CD
Docker(_ | compose | swarm), **Apache Kafka**, PostgreSQL, MongoDB, Flask, **VMWare & VirtualBox**
Linux/Unix (advanced in x ∀x ∈ Distros), **MacOS**, Windows, Embedded Systems, ROS2
Raspberry Pi, Arduino, FLIR Lepton Thermal Camera, (x86_64/AMD64, aarch64)
Hobbies: Homelabbing, Prototyping, long distance backpacking (Colorado Trail 2020, Appalachian Trail 2021)