

Maksim Levental

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EDUCATION

University of Chicago

Chicago, IL

- *Doctorate in Computer Science*

Fall 2020 – Expected Fall 2023

Topic: Hardware/Software Co-design for Scientific HPC

GPA: 4.0

University of Florida

Gainesville, FL

- *Master of Science in Computer Science*

Fall 2013 – Fall 2015

Topic: Databases for Buried Hazard Signature Metadata

GPA: 3.72

Florida State University

Tallahassee, FL

- *Bachelor of Science in Mathematics/Physics*

Fall 2007 – Fall 2010

Topic: Low-energy Hadronic Reactions

GPA: 3.73

ACADEMIC EXPERIENCE

- **A Hardware Co-design Workflow for Scientific Instruments at the Edge** In preprint
- **Ultrafast Focus Detection for Automated Microscopy** In preprint
- **Steering of Flame Spray Pyrolysis Nanoparticle Synthesis** 10.1109/XLOOP51963.2020.00011
- **Super Resolution for Automated Target Recognition** FON: W909MY-14-R-D010
- **A Deep Neural Network Model for Hazard Classification** 10.1117/12.2535681

INDUSTRY EXPERIENCE

Facebook

Menlo Park, CA

- *PhD Systems Research (PyTorch Graph & Runtime)*

July 2021 –

- **Compiler:** Study and prototype static and profile guided memory allocation optimization for NN Graphs (TorchScript and LazyTensor).

Facebook

Menlo Park, CA

- *PhD ML Intern (Groups Ranking)*

July 2020 – October 2020

- **Experiment:** Studied the effect of repetition on Click Through Rate (CTR) and engagement for Groups You Should Join (GYSJ).
- **Backend:** Designed and implemented repetition reduction mechanisms for GYSJ.
- **ML:** Designed and implemented real-time features for ranking and bid optimization for GYSJ.
- **ML:** Implemented and tested features for SparseNN models that captured repetition history for clustered groups.
- **ML:** Ported Smart-scorer, for studying Heterogeneous Treatment Effects, to GYSJ use case.

Precision Silver LLC

Gainesville, FL

- *Senior Software Engineer*

June 2018 – August 2019

- **Embedded:** Built (from zero) soft-realtime RPi based system for collecting RGB and multi-spectral images at precise time/distance steps. Module was deployed on the DJI M600 platform in concert with Swift Piksi GPS module. This project involved serial communication with the Piksi and using PWM to actuate cameras and receive remote control signals.
- **Mobile:** Built (from zero) iOS application for planning and executing DJI M600 flights. This included porting and extending crop row/column swath calculations and integrating the DJI SDK. Completed many test and calibration flights. App is currently used by ~10 industry plant science research groups.
- **ML:** Implemented k -nearest neighbors model to improve generation of vegetation mask for purposes of pixel level image segmentation.
- **Backend:** Merged plant metrics database schema with customer database schema (normalizing relations), Implemented “phone home” system for remote upload stations.

- **Frontend:** Built several React components for user interface web app (displaying plot metrics). Refactored, extended, and created several QGIS plugins for use in vegetation mask creation and consequent image segmentation.
- **DevOps:** Implemented on premises CI (Concourse) that built iOS app, tested for regressions, and deployed backend code to Lambdas.

- **Preview Technology LLC**

Gainesville, FL

CTO

July 2017 – June 2018

- **Business:** Sales (inbound and outbound), account management (one large multinational and several small regional), fundraising (pitched to angel investors and raised \$220k).
- **Backend:** Built/owned entire backend using Django, Docker, Postgres, Elasticsearch, Redis. The backend included user management, authentication, analytics, content management, and fiducial marker generation.
- **Frontend:** Built/owned mobile app and desktop dashboard using VueJS. The mobile app included social authentication, augmented reality components, QR code recognition, profile management.
- **DevOps:** Built/owned all of deploy on AWS (RDS, EC2, EB, Lambda).

Older projects/experience available upon request

SKILLS

- **Programming Languages:**

- Intermediate: Python
- n00b: C++, Rust, CUDA

- **Technologies:** PyTorch, TorchScript, AWS, CloudFormation, Vue, React, Django, PostgreSQL, QGIS, Docker, Git

- **Human Languages:** English (native), Russian (native)

REFERENCES

Available upon request