

# Junkeun Yi

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## Education

### University of California, Berkeley

*Electrical Engineering and Computer Science, M.S.*

**Expected May 2024**

- Advisor: Professor Trevor Darrell
- Computer Vision research with focus on vision transformer models and video prediction.

### University of California, Berkeley

*Computer Science, B.A. (GPA: 3.73)*

**December 2022**

- Coursework: Algorithms, Database Systems, Operating Systems, Machine Learning, Natural Language Processing, Reinforcement Learning, Computer Vision, Optimization
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## Skills

**Languages** - Python, Java, C, Go, Bash, SQL | **Frameworks and Utilities** - Git, Bash, Conda, Linux, PyTorch

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## Experience

### Berkeley AI Research Lab (BAIR) - *Apprentice Researcher*

**September 2021 - Present**

- Working on CVPR publication for a video prediction transformer model.
- Implemented SAVi for PyTorch, an unsupervised video object understanding model. Original model by Google written in Jax, score-matched reimplementation in PyTorch.

### Pivotal Software (Acquired by VMWare) - *Software Engineer Intern*

**May 2019 - August 2019**

- Open-Source contribution to the Greenplum Database (Postgres-based SQL database), adding backup utility and command-line interface features and fixing bugs.
- Wrote pipeline for incremental changes between a database and its remote backup using Write-Ahead Log streaming, incorporating Kafka as a streaming medium and programmed consistency points for source-to-backup consistency. (slides: [link](#))

### Networked Systems Lab (Netsys) - *Apprentice Researcher*

**April 2018 - May 2019**

- Contributed in writing AWS Kubernetes elastic cluster controller using the Kubernetes Go-client, Metrics-Server client, and the Prometheus API for resource management.

### Republic of Korea Army - *Enlisted Soldier*

**November 2019 - June 2021**

- Worked as an enlisted soldier in the combined US 2nd Infantry Division / Korean Army forces.
  - Performed english-korean translation/interpretation between officers and manned computing devices.
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## Projects

### SAVi-pytorch (PyTorch): [github.com/junkeun-yi/SAVi-pytorch](https://github.com/junkeun-yi/SAVi-pytorch)

- Implemented Machine Learning model from “Conditional Object-Centric Learning from Video”.
- Matches the evaluation scores of the original Jax version of the model.

### Uncertainty-Weighted Distillation (PyTorch): [github.com/junkeun-yi/Uncertainty-Weighted-Distillation](https://github.com/junkeun-yi/Uncertainty-Weighted-Distillation)

- Implemented [Policy Distillation](#) with auxiliary [Random Network Distillation](#) for OpenAI Gym Atari.
- Match policy performance between distilled policy with exploration and teacher policy.

**Custom Relational Database** (Java, class project): With recovery, concurrency and indexing capabilities.

**Custom Operating System** (C, class project): With concurrency, scheduling, VM, File System capabilities.

**Computational Photography Algorithms** (Python, class project): Implement multiple computational photography algorithms including neural style transfer, panorama, an homogenous coordinate transforms.