

# Kevin Limanta

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Office: Microsystems Technology Laboratory Room 39-625, Cambridge, MA 02139

## Education

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### Massachusetts Institute of Technology

*PhD Candidate in EECS*

Cambridge, MA

Sept 2020 - now

### Massachusetts Institute of Technology

*Bachelor of Science, Dept. of Physics, GPA: 5.0/5.0*

Cambridge, MA

June 2020

## Research Experience

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### Tomás Palacios Group, Microsystems Technology Laboratories, MIT

*SuperUROP 2019-20 (AMD Undergraduate Research and Innovation Scholar)*

Cambridge, MA

08/18 - present

- Fabrication, measurement and analysis of C-V and I-V characteristics of  $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$  ferroelectric MOS and MIM capacitors on Si and GaN high electron mobility transistors
- Nanofabrication using cleanroom techniques such as lithography, dry and wet etching, oxide atomic layer deposition, metal deposition, acid cleaning, etc.
- Simulated (with Sentaurus TCAD and Silvaco Atlas) transfer characteristics of non-volatile-memory-based synapses for a neural network hardware accelerator

### Nakatsuji Lab, Institute of Solid State Physics, University of Tokyo

*Undergraduate Researcher*

Kashiwa, Japan

06/18 - 08/18

- Collected and analyzed electrical and magnetic measurement data of a new quantum material ( $\text{MnB}_2$ ) at low temperatures and high magnetic fields, for potential spintronics applications
- Prepared single crystal samples of  $\text{MnB}_2$  by x-ray diffraction, powder diffraction, cutting, and polishing

### Photon Scattering Lab, Department of Physics, MIT

*Undergraduate Researcher*

Cambridge, MA

06/17 - 05/18

- Measured and analyzed high-resolution Raman scattering data of iron-based high temperature superconductors ( $\text{RbFe}_2\text{As}_2$  and  $\text{KFe}_2\text{As}_2$ ) under ultra-high vacuum and cryogenic temperatures
- Explored quantum properties of  $\text{RbFe}_2\text{As}_2$  superconductors in a hard x-ray scattering experiment at NSLS II, Brookhaven National Laboratory

## Technical Skills

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- Nanofabrication in cleanroom (2 year experience): Photolithography (maskless laser writer), reactive ion etching, metal evaporation (ebeam), wet processing (etching and cleaning), atomic layer deposition (plasma enhanced and thermal)
- On-wafer electrical characterization: I-V, C-V using semiconductor parameter analyzer and probe station, P-E with ferroelectric tester
- Materials characterization: Raman spectroscopy, single-crystal X-ray diffraction, X-ray powder diffraction
- Simulation and software: Sentaurus Device, Silvaco Atlas, Python, Matlab, Solidworks
- Mask design: Clewin
- Machine shop tools (e.g. band saw, cold saw, laser cutter, arc welding)

## Research presentations

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MTL Annual Research Conference 2020

Jan 2020

SuperUROP 2019-2020 poster session to industry partners and MIT

Dec 2019

Presented to research community at University of Tokyo

July 2018