

# Nikita Gennadovich Lukhanin

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## CONTACT

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## CURRENT POSITION

Graduate Student Researcher  
University of California, Berkeley  
Department of Mechanical Engineering

## ADDRESS

Etcheverry Hall  
2505 Hearst Ave, Berkeley, CA 94709

## EDUCATION

<b>University of California, Berkeley</b>	<b>Expected: May 2028</b>
Ph.D., Mechanical Engineering Advisors: Liwei Lin and Grigory Tikhomirov	
<b>University of California, Berkeley</b>	<b>Expected: May 2026</b>
M.S., Mechanical Engineering Advisors: Liwei Lin and Grigory Tikhomirov	
<b>University of Illinois at Urbana-Champaign</b>	<b>May 2023</b>
B.S., Mechanical Science and Engineering <b>Highest Honors</b> Advisors: Joaquín Rodríguez-López, Charles Schroeder	
<b>College of DuPage</b>	<b>May 2021</b>
A.S., Engineering Science <b>High Honors</b>	

## AWARDS AND DISTINCTIONS

- National Science Foundation (NSF) Graduate Research Fellowship *Awarded to roughly 1 out of every 7 entering doctoral students nationwide.* **2023**
- Berkeley Fellowship *Offered to highly qualified entering doctoral students at UC Berkeley.* **2023**
- O. A. Leutwiler Award *Recipient determined upon scholarship, personal qualities, and professional and cultural activities.* **2023**
- Best Presentation Award, Gulf Coast Undergraduate Research Symposium (GCURS) *Awarded to the best presentation within the Materials Science and NanoEngineering section.* **2022**
- Beckman Undergraduate Fellowship *Award of \$3,000 given to five undergraduates per year for interdisciplinary research.* **2022**
- James Scholar *Honors distinction offered for maintaining a minimum GPA of 3.5.* **2021**
- ME 200 Most Valuable Player Award *Awarded to students in thermodynamics who contribute most to the class.* **2021**
- Academic High Honors *High honors distinction offered for maintaining a minimum GPA of 3.5.* **2019**
- Scholastic Gold Medal Award “Moon Rocks” *Highest distinction in a national high school art competition.* **2019**
- Scholastic Gold Medal Award “Bird House” *Highest distinction in a national high school art competition.* **2018**

## POSITIONS

1. Graduate Student Researcher **Fall 2023 - Present**  
Affiliation: *University of California, Berkeley; Department of Mechanical Engineering*  
Advisor(s): Liwei Lin, Grigory Tikhomirov
2. Undergraduate Research Assistant **October 2021 - August 2023**  
Affiliation: *University of Illinois at Urbana-Champaign; Rodríguez-López Laboratory; Schroeder*

*Group*

Advisor(s): Joaquín Rodríguez-López, Charles Schroeder

3. Automation Engineering Intern **June 2021 - August 2021**  
*SGS IBR Laboratories*; Project: Automation and test system development

**STUDENTS**

Please see <http://lukhanin.net/> for information on my awesome students.

**Student Award Highlights:** Divij Muthu (Accepted to present at GCURS), Sean Isomatsu (Accepted to present at GCURS; Haas Scholars), Kang Wang (Accepted to the 2025 BMES Annual Meeting)

**Master of Engineering Students:**

- |  |                           |
|--|---------------------------|
| 1. Abbie He ( <i>University of California, Davis</i> )                           | <b>Sep 2025 – Present</b> |
| 2. Di Tian ( <i>Northeastern University, China</i> )                             | <b>Sep 2025 – Present</b> |
| 3. Mindy Yao ( <i>Georgia Institute of Technology</i> )                          | <b>Sep 2025 – Present</b> |
| 4. Shiva Annamaneni ( <i>University of California, Riverside</i> )               | <b>Sep 2025 – Present</b> |
| 5. Linda Liu ( <i>Northwestern University</i> )                                  | <b>Sep 2025 – Present</b> |
| 6. Ryan Johnson ( <i>University of California, Davis</i> )                       | <b>Sep 2025 – Present</b> |
| 7. Suraj Reddy Chamakura ( <i>Indian Institute of Technology Madras, India</i> ) | <b>Sep 2025 – Present</b> |
| 8. Tofic Esses ( <i>McGill University, Canada</i> )                              | <b>Sep 2025 – Present</b> |
| 9. Emory Adelman ( <i>San Francisco State University</i> )                       | <b>Sep 2025 – Present</b> |
| 10. Alex Haynes ( <i>Virginia Tech</i> )   | <b>Sep 2025 – Present</b> |
| 11. Romain Paul Ting ( <i>University of Southern California</i> )                | <b>Sep 2025 – Present</b> |
| 12. Alexander Crary ( <i>California Poly, San Luis Obispo</i> )                  | <b>Sep 2025 – Present</b> |

**Undergraduate Students:**

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|---|----------------------------|
| 1. Kirill Vasilev ( <i>University of California, Berkeley</i> )       | <b>Oct 2025 – Present</b>  |
| 2. Claire Lin ( <i>University of California, Berkeley</i> )           | <b>May 2025 – Present</b>  |
| 3. Akshay Shivkumar ( <i>University of California, Berkeley</i> )     | <b>May 2025 – Present</b>  |
| 4. Mia Wang ( <i>University of California, Berkeley</i> )             | <b>Apr 2025 – Present</b>  |
| 5. Divij Muthu ( <i>University of California, Berkeley</i> )          | <b>Apr 2025 – Present</b>  |
| 6. Carsten Zieger ( <i>University of California, Berkeley</i> )       | <b>Mar 2025 – Present</b>  |
| 7. Yucheng Yang ( <i>University of California, Berkeley</i> )         | <b>Mar 2025 – Present</b>  |
| 8. Erin Kwon ( <i>University of California, Berkeley</i> )            | <b>Mar 2025 – Present</b>  |
| 9. Kabeer Nayyar ( <i>University of California, Berkeley</i> )        | <b>Mar 2025 – Present</b>  |
| 10. Kang Wang ( <i>The Chinese University of Hong Kong</i> )          | <b>Feb 2025 – Oct 2025</b> |
| 11. Sean Ryota Isomatsu ( <i>University of California, Berkeley</i> ) | <b>Sep 2024 – Present</b>  |
| 12. Keming Bai ( <i>Hebei University of Technology</i> )              | <b>Jul 2024 – Jul 2025</b> |

**INDUSTRY**

1. Automation Engineering Intern (**Ann Arbor, MI**) **Summer 2021**  
*SGS IBR Laboratories*; Project: Lab-wide automation

VOLUNTEER	1. Organizer <i>PODER Program, Chicago</i>	2020
	2. Speaker, Organizer <i>Engineering Olympics, Glen Ellyn</i>	2020
	3. Coordinator <i>Homeschool Outreach, Glen Ellyn</i>	2019
	4. Aid <i>Boy Scouts of America, Glen Ellyn</i>	2019
PEER-REVIEWED PAPERS	1. I. Oh*, M. Pence*, <b>N. G. Lukhanin*</b> , O. Rodríguez*, J. Rodríguez-López, C. Schroeder. “The Electrolab: An Open-Source, Modular Platform for Automated Characterization of Redox-Active Electrolytes”. <i>Device (Device)</i> , 2023. <b>Editor’s Choice</b>	
	2. M. Pence, O. Rodríguez, <b>N. G. Lukhanin</b> , C. Schroeder, J. Rodríguez-López. “Automated Measurement of Electrogenerated Redox Species Degradation Using Multiplexed Interdigitated Electrode Arrays”. <i>ACS Measurement Science Au (ACS Meas. Sci. Au)</i> , 2022.	
CONFERENCE PAPERS	1. <b>N. G. Lukhanin</b> , D. Muthu, C. Gu, M. Teng, K. Behrouzi, C. Chen, L. Waller, L. Lin. “3D Imaging via Four pMUT Receivers by Compressed Sensing”. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , 2026.	
	2. <b>N. G. Lukhanin</b> , K. Bai, K. Wang, M. Wang, D. M. Fitzgerald, G. Tikhomirov, L. Lin. “Ultra-Sensitive Nanosensor for Rapid Detection of PFAS in Simulated Drinking Water”. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , 2026.	
	3. D. M. Fitzgerald, Y. Xie, S. Isomatsu, <b>N. G. Lukhanin</b> , Z. Wang, L. Lin. “An Acoustic Touch-Motion Button with Haptic Function via an In-Situ Fabricated Elastomeric Lens Atop pMUTs”. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , 2026.	
	4. J. H. Park, P. He, S. K. Ghosh, F. Xia, <b>N. G. Lukhanin</b> , J. Zhai, R. D. Rundle, L. Lin. “Moisture-Induced Energy Harvesters by Water Harvesting for Continuous Arid Environment Operations”. <i>Proceedings of the 23rd International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers)</i> , 2025.	
	5. Y. Ma, <b>N. G. Lukhanin</b> , E. Wang, K. Y. Shum, Y. Du, L. Lin, X. Guan. “LiGO: LLM-Enhanced Iterative Graphic Optimization for Large Field-of-View Underwater 3D Reconstruction”. <i>Proceedings of SPIE: AI and Optical Data Sciences VI (SPIE)</i> , 2025.	
	6. <b>N. G. Lukhanin</b> , F. Xia, S. Isomatsu, M. Teng, B. Jiang, J.-D. Zanone, L. Lin. “Biological Bone Age Assessment Via pMUTs”. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , 2025.	
UNREVIEWED PAPERS	1. J. H. Park, P. He, <b>N. G. Lukhanin</b> , S. K. Ghosh, S. Park, R. D. Rundle, L. Lin. “Moisture-Induced Electrical Energy Generation by Harvesting Atmospheric Water in Arid Environments”. <i>Nano Energy (Nano Energy)</i> , 2025. <b>Manuscript under review</b>	
	2. <b>N. G. Lukhanin</b> , M. Wang, K. Wang, C. Zieger, K. Bai, W. Yue, L. Lin. “YBCO-Based Superconducting Micro/Milli-Robotic Systems”. <i>Hilton Head Workshop on Solid-State Sensors, Actuators, and Microsystems (Hilton Head)</i> , 2026. <b>Submitted</b>	
	3. <b>N. G. Lukhanin</b> , K. Wang, C. Lin, K. Bai, D. M. Fitzgerald, G. Tikhomirov, L. Lin. “Sweat Analysis via AI-Powered Electrochemical Impedance Spectroscopy During Exercise”. <i>Hilton Head Workshop on Solid-State Sensors, Actuators, and Microsystems (Hilton Head)</i> , 2026. <b>Submitted</b>	
	4. D. M. Fitzgerald, <b>N. G. Lukhanin</b> , S. Isomatsu, Y. Xie, H. Deng, K. Nakamura, S. Trolier-McKinstry, L. Lin. “Wearable pMUT Array for Multi-Target Transcranial Neuromodulation via Ultrasound”. <i>Hilton Head Workshop on Solid-State Sensors, Actuators, and Microsystems (Hilton Head)</i> , 2026. <b>Submitted</b>	

5. **N. G. Lukhanin**, K. Bai, K. Wang, M. Wang, D. M. Fitzgerald, G. Tikhomirov, L. Lin. “Ultra-Sensitive Nanosensor for Rapid Detection of PFAS in Drinking Water”. *In Preparation* (-), 2026. **In Progress**
6. **N. G. Lukhanin**, D. Muthu, M. Teng, C. Chen, M. Sedky, L. Lin. “3D Imaging via pMUTs by Compressed Sensing”. *In Preparation* (-), 2026. **In Progress**

**SELECTED  
PRESS**

1. “O. A. Leutwiler Award.” University of Illinois Department of Mechanical Science and Engineering. [Article link].
2. “Beckman Undergraduate Fellowship.” Beckman Institute for Advanced Science and Technology. [Article link].
3. “Scholastic Art & Writing Awards – Visual Arts Honors.” North Fine Arts. [Article link].

**SELECTED  
POSTERS**

1. Ultra-Sensitive Nanosensor for Rapid Detection of PFAS in Simulated Drinking Water.  
*MEMS 2026*, Salzburg, Austria (Spring 2026)  
*BSAC*, Berkeley CA (Fall 2025)
2. Biological Bone Age Assessment via pMUTs.  
*BSAC*, Berkeley, CA (Spring/Fall 2025)  
*MEMS 2025*, Kaohsiung (Spring 2025)  
*BSAC*, Berkeley CA (Fall 2024)
3. High-Precision Compliant Mechanism for Use in Scanning Electrochemical Microscopy.  
*Turkey Run Analytical Chemistry Conference*, Turkey Run State Park, IN (Fall 2022)  
*Undergraduate Research Symposium*, University of Illinois, IL (Spring 2022)

**SELECTED  
TALKS**

1. 3D Imaging via Four pMUT Receivers by Compressed Sensing.  
*MEMS 2026*, Salzburg, Austria (Spring 2026)
2. High-Precision Compliant Mechanism for Use in Scanning Electrochemical Microscopy.  
*Undergraduate Research Symposium*, University of Illinois, IL (Spring 2023)  
*Gulf Coast Undergraduate Research Symposium*, Rice University, TX (Fall 2022)
3. Engineering Olympics Outreach Demonstration.  
*Engineering Olympics*, College of DuPage, IL (Fall 2020)

**KNOW-HOW**

**Computer Languages:** Experience with systems, scripting, scientific computing, and embedded programming languages, with emphasis on hardware-interfacing, numerical analysis, and experimental automation.

C++, Python, C, R, G Code, Bash, HTML

**Applications:** Engineering and scientific software for mechanical design, simulation, data analysis, and circuit development.

SolidWorks, MATLAB, Fusion 360, KiCad, Ansys, Mathematica, MS Office

**Technologies:** Hands-on experience with rapid prototyping, embedded platforms, robotics middleware, and version-controlled development workflows.

3D Printing, CNC, Embedded Systems, Arduino, ESP, Teensy, ROS, Git, Jetson Xavier NX, IoT

**Nanolab Technologies:** Cleanroom and nanofabrication tools for micro- and nanoscale device fabrication and characterization.

Evaporation, Sputtering, HF Etch Release, Surface Contact Angle Measurement, SEM, AFM, Wirebonding

**Spoken Languages:** Fluent and working proficiency in multiple spoken languages.

English, Russian, Ukrainian, Mandarin Chinese

**ETC.**

Please see <http://lukhanin.net> for other information.