

Kel Levick

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https://klevick.github.io

EDUCATION

Doctor of Philosophy in Electrical and Computer Engineering <i>University of Illinois at Urbana-Champaign</i> <ul style="list-style-type: none">• Dissertation: "Multi-String Reconstruction Problems with Applications in Immunogenomics"• Advisor: Ilan Shomorony	2019 – 2025
Bachelor of Science in Electrical Engineering (Honors) <i>University of California, San Diego</i>	2015 – 2019

PUBLICATIONS

Fundamental Limits of Multiple Sequence Reconstruction from Substrings. <u>Kel Levick</u> and Ilan Shomorony, <i>International Symposium on Information Theory</i> , Taipei, Taiwan, 2023.	
Achieving the Capacity of a DNA Storage Channel with Linear Coding Schemes. <u>Kel Levick</u> , Reinhard Heckel, and Ilan Shomorony, <i>Conference on Information Sciences and Systems</i> , Princeton, USA, 2022.	
The Twelfefold Way of Non-Sequential Lossless Compression. <u>Kel Levick</u> , et al., <i>Data Compression Conference</i> , 2021. (Equal authorship from Illinois Information Theory students)	
Comparison of Neural Network Architectures for Spectrum Sensing. Ziyu Yu, Andrew Gilman, Qiheng Peng, <u>Kel Levick</u> , Pamela Cosman, and Laurence Milstein, <i>Workshop on Advancements in Spectrum Sharing</i> , Waikoloa, USA, 2019.	

RESEARCH EXPERIENCE

Graduate Research Assistant , Prof. Ilan Shomorony, University of Illinois <ul style="list-style-type: none">• Determined feasibility regions for k-mer-based DNA assembly and storage retrieval methods• Developed algorithm for inferring immunoglobulin genes from cDNA using de Bruijn graphs	2019 – 2025
Graduate Research Assistant , Prof. Venugopal Veeravalli, University of Illinois <ul style="list-style-type: none">• Implemented and optimized a novel quickest change detection algorithm to instantly report seismic activity• Collected, analyzed, and filtered seismic data for quality control	2021
Undergraduate Researcher , Profs. Pamela Cosman and Laurence Milstein, UC San Diego <ul style="list-style-type: none">• Designed cognitive radio neural network that can detect signals in sampled sensing intervals matching radiometer accuracy	2018 – 2019

TEACHING EXPERIENCE

ECE 314: Probability in Engineering Lab , University of Illinois Instructor <ul style="list-style-type: none">• Ranked as Excellent in Fall 2023	2022 – 2025
ECE 313: Probability in Engineering , University of Illinois Head Teaching Assistant	2020 – 2021
ECE 110: Introduction to Electronics , University of Illinois Lab Teaching Assistant	2019
ECE 144: Introduction to LabVIEW , UC San Diego Lab Tutor	2019

SERVICE AND OUTREACH

ECE Historically Underrepresented Genders Graduate Mentor, *University of Illinois*

- Mentorship program for women, transgender, and nonbinary students in engineering
- Meet with undergraduate students for discussions on graduate school, research topics, and career options

2018 Girls' STEM Fair, *UC San Diego*

- Developed workshop teaching MATLAB and signal processing to middle school girls
- Organized panel of female professors and graduate students focused on inspiring women in STEM

Eta Kappa Nu Engineering Academy, *UC San Diego*

- Launched chapter's first Outreach Program under direction of ECE Department Chair, teaching hands-on electrical engineering workshops to classes of 10-15 high school students
- Organized volunteer effort of additional student teachers to assist with class activities
- Through presentations to the ECE Alumni Advisory Board, secured funding from department and alumni for future outreach efforts

Reviewer: *IEEE Transactions on Molecular, Biological, and Multi-Scale Communications*

HONORS AND AWARDS

NSF Student Travel Grant for ISIT Conference	2023
UIUC Mavis Future Faculty Fellows Program	2023
<ul style="list-style-type: none"> • Competitive fellowship for graduate engineering students interested in faculty careers 	
UCSD ECE Alumni Service Award	2021
UCSD ECE Department Award of Excellence	2019
<ul style="list-style-type: none"> • One of two recipients out of 200+ graduates 	
UCSD ECE Summer Research Scholarship	2018
Phi Beta Kappa	2018
Eta Kappa Nu	2017