Kateryna Voitiuk

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EDUCATION

University of California, Santa Cruz *2019 - Present*
Ph.D. Candidate, Biomolecular Engineering and Bioinformatics GPA: 4.0
Designing an Electronics and Software Platform for Bio and in Silico Hybrid Neural Networks
Advisors: David Haussler, Mircea Teodorescu

University of California, Santa Cruz *2015 - 2019*
B.A. Network & Digital Technology GPA: 3.85
Graduated with Highest Honors in the major
University Honors: Cum Laude

EXPERIENCE

Haussler Lab, Teodorescu Lab, UC Santa Cruz *2019 - Present*
Graduate Researcher

Designing models and algorithms for interaction with live neural networks
Developing hardware platform for electrical sensing and stimulation of neural activity
Engineering microfluidic chips and protocols for advanced connected organoid models

Haussler Lab, Teodorescu Lab, UC Santa Cruz *2017 - 2019*
Undergraduate Researcher

Created components of an automated imaging platform for monitoring human cortical organoids
Built cloud infrastructure for optogenetic experiment remote control
Designed custom hardware for optogenetic stimulation
Designed and manufactured mechanical and fluidic prototypes for organoid culture

Riedel-Kruse Lab, Stanford University *June - July 2015*
Robotics Research Intern

Designed and built 3 pipetting Lego robots for implementation in STEM curriculum
Programmed routines for 5 different automated experiments

PUBLICATIONS

Parks, D.F., **Voitiuk, K.**, Geng, J., Elliott, M.A.T., Keefe, M.G., Jung, E.A., Robbins, A., Baudin, P.V., Ly, V.T., Hawthorne, N., Yong, D., Sanso, S.E., Rezaee, N., Sevetson, J., Seiler, S.T., Currie, R., Hengen, K.B., Nowakowski, T.J., Salama, S.R., Teodorescu, M., Haussler, D., 2021. Internet of Things Architecture for High Throughput Biology. bioRxiv 2021.07.29.453595. https://doi.org/10.1101/2021.07.29.453595
(Submitted to iScience)

Voitiuk, K., Geng, J., Keefe, M.G., Parks, D.F., Sanso, S.E., Hawthorne, N., Freeman, D.B., Mostajo-Radji, M.A., Nowakowski, T.J., Salama, S.R., Teodorescu, M., Haussler, D., 2021. Light-weight Electrophysiology Hardware and Software Platform for Cloud-Based Neural Recording Experiments. bioRxiv 2021.05.18.444685. https://doi.org/10.1101/2021.05.18.444685
(Submitted to Journal of Neural Engineering)

Ly, V.T., Baudin, P.V., Pansodtee, P., Jung, E.A., **Voitiuk, K.**, Rosen, Y., Willsey, H.R., Mantalas, G.L., Seiler, S.T., Selberg, J.A., Cordero, S.A., Ross, J.M., Pollen, A.A., Nowakowski, T.J., Haussler, D., Mostajo-Radji, M.A., Salama, S., Teodorescu, M., 2021. Development of a Low-Cost System for Simultaneous Longitudinal Biological Imaging. bioRxiv 2021.05.17.443454. https://doi.org/10.1101/2021.05.17.443454
(Submitted to Communications Biology)

Gerber, L.C., Calasanz-Kaiser, A., Hyman, L., **Voitiuk, K.**, Patil, U., Riedel-Kruse, I.H., 2017. Liquid-handling Lego robots and experiments for STEM education and research. PLOS Biology 15, e2001413. https://doi.org/10.1371/journal.pbio.2001413

TECHNICAL SKILLS

Languages	Python, C, C++, Java, Bash, MATLAB
Approaches	Machine Learning, Networks Programming, Concurrent Programming
Web/Markup	LaTeX, Markdown, HTML, CSS
Tools/Platforms	UNIX, Git, Jupyter, Docker, Kubernetes, Amazon Web Services, Redis
Electronics	FPGA, SoC, Printed Circuit Board Design
Mechanical	3D Modeling (Autodesk Inventor, Fusion), 3D Printing/Rapid Prototyping, CNC

TEACHING EXPERIENCE

University of California, Santa Cruz

BME 18: Scientific Principles of Life, Teaching Assistant, *Fall 2021*
Mentor/Guest Teacher, Alisal High School AP Biology, *Fall 2020 - Present*
Mentor, Genomics Institute Research Mentoring Internship (RMI) program *Fall 2020 - Spring 2021*
Project Mentor, NeuroTechSC *Spring 2020 - Spring 2021*
BME 18: Scientific Principles of Life, Course Developer & Course Assistant, *Fall 2018*
CMPE 13/L: Computer Systems and C Programming, Tutor/Grader, *Winter 2017*
CMPE 12/L: Computer Systems and Assembly Language, Tutor/Grader, *Fall 2016*

Graham Middle School

Robotics Team Mentor, *September - November 2014*

POSTERS & PRESENTATIONS

2021 PBSE Annual Conference (Poster)
2021 NHGRI Annual Conference (Poster)
2020 PBSE Annual Conference (Poster)
2019 Graduate Society of Women Engineers (UCSC SWE) Guest Talk
2019 Braingeneers Presentation for UCSC Deans Council
2019 Genomics Institute Open House Braingeneers Presentation
2018 Braingeneers UC San Francisco Retreat Presentation
2019 Genomics Institute Science Meeting Research Presentation
2018 Symposium for Undergraduate Research at UCSC (Poster)
2018 Braingeneers Schmidt Grant Kick-off Retreat Presentation
2018, 2019 Wet Lab Tour for Girls in Engineering
2018 Koret Research Slam (Poster)
2018 Braingeneers Presentation for NSF Visitor Jim Kurose
2018 UCSC Baskin School of Engineering Graduation Open House (Poster)
2018, 2019 UCSC Alumni Weekend (Poster)
2017, 2018, 2019 Braingeneers Presentation for Genomics Institute
2017 Liquid-handling Lego robots and experiments for STEM education and research (Poster)

2017 Braingeneers Presentation Talk for UCSF Visitors at UCSC
2017 Braingeneers Presentation Talk at USCF

HONORS & AWARDS

2020-21 UCSC Genome Sciences NHGRI T-32 Trainee
2018-19 Koret Scholarship
2015, 2016, 2017, 2018 Dean's Honors List
2015 Impressive Participation in the 2015 US National Chemistry Olympiad Local Competition

ORGANIZATIONS

NeuroTechSC - Technical and Research Advisor
Applied Artificial Intelligence Institute (AAII) - Member

LANGUAGES

English (fluent), Russian (native), Ukrainian (native), French (limited working)