

## Julien A. Bloch

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CONTACT INFORMATION	Foege Hall N210 Department of Bioengineering University of Washington Seattle, WA 98105 USA	(760) 898-0190 julienb@uw.edu julienbloch.me linkedin.com/in/julien-bloch-54696573
RESEARCH INTERESTS	Neural engineering, optogenetics, neuroplasticity, computational neuroscience, brain-computer interface, machine learning	
EDUCATION	<b>University of Washington</b> , Seattle, Washington USA Ph.D. Student, Bioengineering, expected graduation date: May 2023 Advisor: Azadeh Yazdan-Shahmorad <b>University of California Berkeley</b> , Berkeley, California USA B.A., Physics, December, 2017 B.A., Cognitive Science, December, 2017	
PROFESSIONAL EXPERIENCE	<b>Machine Learning Intern</b> , Elementum Palo Alto, California USA June 2018 - August 2018 Developed machine learning models for supply chain data analytics. Deployed models to production through Apache Spark compute clusters and AWS Sagemaker. Improved my skills in machine learning workflow and software production cycle. <b>Business Analyst Intern</b> , Everwise San Francisco, California USA August 2013 - December 2013 Conducted market research, sales outreach, app prototyping, and business development planning. Reported directly to the CEO.	
RESEARCH EXPERIENCE	<b>Graduate Research Assistant</b> , Fetz Lab - UW Dept. of Physiology and Biophysics Seattle, Washington USA January 2019 - March 2019 Rotated under Professor Fetz under the supervision of Postdoc Irene Rembado. Ran non-human primate experiments consisting of cortical and vagal nerve electrical stimulation and recording, for the purpose of modulating neural plasticity. <b>Graduate Research Assistant</b> , Yazdan Lab - UW Depts. of Bioengineering and ECE Seattle, Washington USA September 2018 - December 2018 Rotated under Professor Yazdan and completed data analysis for different datasets of optogenetic and electrical stimulation for neuroplasticity modulation. Research culminated in a conference paper that was submitted to IEEE EMBC 2019. <b>Undergraduate Research Assistant</b> , Engineers for Exploration - UC San Diego Dept. of ECE San Diego, California USA June 2017 - August 2017 Researched at a NSF funded Research Experience for Undergrads (REU) in collaboration with UCSD, Scripps Institute for Oceanography, and National Geographic. Developed computer vision models to automatically classify land area from images obtained via drone and satellite. Improved my skills in machine learning, computer vision, and remote sensing.	

	<p><b>Undergraduate Research Assistant</b>, SwarmLab - UC Berkeley Dept. of EECS  Berkeley, California USA June 2015 - May 2017</p> <p>Performed neural engineering research of acousto-optic waveguides for optical tissue penetration under the supervision of Professor Maysam Chamanzar (Carnegie Mellon), Professor Maharbiz (UC Berkeley), and Professor Alam (UC Berkeley). Improved my skills in circuit design, optics, and machining. The research culminated in a publication in <i>Nature Communications</i>.</p> <p><b>Undergraduate Research Assistant</b>, TAFLab - UC Berkeley Dept. of MechE  Berkeley, California USA August 2014 - December 2014</p> <p>Performed quantum hydrodynamics research for Professor Reza Alam at the Theoretical and Applied Fluid Mechanics Lab. I conducted literature review and helped build parts of the experimental setup in a machine shop.</p>
HONORS AND AWARDS	<p><b>Graduate Education for Minorities Fellowship</b>, 2018 - Present</p> <p><b>UW College of Engineering Dean's Fellowship</b>, 2018 - Present</p> <p><b>Donald W. and Joan P. Baker Endowed Fellowship</b>, 2018</p> <p><b>UC Berkeley Dean's Honors</b>, 2014</p>
PUBLICATIONS	<p>M. Chamanzar, M. Scopelliti, <b>J. Bloch</b>, et al., "Ultrasonic Sculpting of Virtual Optical Waveguides in Tissue," <i>Nature Communications</i>, Jan. 2019.</p> <p><b>J. Bloch</b>, K. Khateeb, D. Silversmith, et al., "Cortical Stimulation Induces Network-Wide Coherence Change Across Non-Human Primate Cortex," <i>Submitted, IEEE EMBC</i>.</p>
AFFILIATIONS	<p>Computational Neuroscience Center, Seattle, Washington USA, 2019 - Present</p> <p>Center for Neurotechnology, Seattle, Washington USA, 2018 - Present</p> <p>University of Washington Institute for Neuroengineering, Seattle, Washington USA, 2018 - Present</p> <p>Washington National Primate Research Center, Seattle, Washington USA, 2018 - Present</p>
PROFESSIONAL MEMBERSHIPS	<p>Institute of Electrical and Electronics Engineers, 2019 - Present</p> <p>Society for Neuroscience, 2018 - Present</p>
COMPUTER SKILLS	<p><b>Programming Languages:</b> Experienced with Python, Java, and Matlab. Proficient with Scheme, Swift, C, and R.</p> <p><b>Machine Learning Skills:</b> Experienced with machine learning algorithms, including computer vision algorithms and neural networks. Experienced with using these algorithms in Python primarily with Keras, Tensorflow, Sklearn and SparkML packages. Experienced with deploying models on PCs, cloud compute systems, and Spark clusters.</p> <p><b>Software Skills:</b> Experienced with Git, Photoshop, Illustrator, and all Microsoft Office products.</p>
EXTRACURRICULAR ACTIVITIES	<p>Member of Alpha Tau Omega Leadership Fraternity, 2014 - Present</p> <p>Officer of Neurotech@Berkeley, 2016 - 2017</p> <p>Volunteer with Berkeley Youth Engagement Advocacy and Housing Program, 2016 - 2017</p> <p>Co-Founder and Officer of Berkeley Barbell Club, 2015 - 2016</p>