

# Adam Li

NEURAL DATA SCIENTIST AND RESEARCHER · APPLIED CAUSAL MACHINE LEARNING · STATISTICS AND MATHEMATICS · ENGINEERING LEADERSHIP AND PROJECT MANAGEMENT

☎ (+1) 805-807-5898 | ✉ adam.li@columbia.edu | 🏠 adam2392.github.io | 📧 adam2392 | 📺 adam2392 | 📱 Adam-Li-5 | 🐦 adam2392

## Positions

### Postdoctoral Research Scientist in the Causal AI Lab

New York City, NY

COLUMBIA UNIVERSITY | COMPUTER SCIENCE DEPARTMENT | ADVISOR: ELIAS BAREINBOIM

Jan. 2022 - Jan. 2024 (tentatively)

- NSF Computing Innovation Fellow

## Education

### PhD in Biomedical Engineering

Baltimore, MD

JOHNS HOPKINS UNIVERSITY | GPA: 3.8 | ADVISOR: DR. SRIDEVI SARMA

Aug. 2015 — Dec 2021

- Thesis: *Localization of the Epileptogenic Zone: A Dynamical Systems Perspective*
- NIH NETI Fellow, NSF-GRFP Fellow, Whitaker Fellow, Chateaubriand Fellow, ARCS Chapter Scholar

### MS in Applied Mathematics and Statistics

Baltimore, MD

JOHNS HOPKINS UNIVERSITY | GPA: 3.8 | ADVISOR: CAREY PRIEBE

Aug. 2019 — May 2021

- Coursework in: Statistical Learning Theory, Optimization, Matrix Analysis, Real Analysis

### B.S. Bioengineering, B.S. Mathematics - Applied Sciences

La Jolla, CA

UNIVERSITY OF CALIFORNIA SAN DIEGO | MAJOR GPA: 3.75

Sep. 2010 — Mar. 2015

- Tau Beta Pi, Gordon Scholar & Fellow, Provost's Honors

## Journal Publications, Preprints and Working Submissions

### Neural Fragility as an EEG Marker of the Seizure Onset Zone

2021

ADAM LI, C. HUYNH, Z. FITZGERALD, I. CAJIGAS, D. BRUSKO, J. JAGID, A. CLAUDIO, A. KANNER, J. HOPP, S. CHEN, J. HAAGENSEN, E. JOHNSON, W. ANDERSON, N. CRONE, S. INATI, K. ZAGHLOUL, J. BULACIO, J. GONZALEZ-MARTINEZ, S. V. SARMA

*Nature Neuroscience* (Oct Cover)

### Quantitative approaches to guide epilepsy surgery from intracranial EEG

2023

ADAM LI\*, J. BERNABEI\*, A. REVELL, N. SINHA, R. J. SMITH, K. GUNNARSDOTTIR, I. ONG, S. V. SARMA, B. LITT

*Brain*

### Manifold Oblique Random Forests: Closing the Gap on Convolutional Neural Networks

2022

ADAM LI\*, R. PERRY\*, C. HUYNH\*, T. M. TOMITA, R. MEHTA, J. ARROYO, J. PATSOLIC, B. FALK, S. V. SARMA, J. T. VOGELSTEIN

*SIMODS*

### Source-sink connectivity: A novel interictal EEG marker for seizure localization

2022

GUNNARSDOTTIR, K., LI, ADAM, SMITH, R., KANG, J., KORZENIEWSKA, A., CRONE, N., ROUSE, A., CHENG, J., KINSMAN, M., LANDAZURI, P., UYSAL, U., ULLOA, C., CAMERON, N., CAJIGAS, I., JAGID, J., KANNER, A., ELARJANI, T., BICCHI, M., INATI, S., ZAGHLOUL, K., BOERWINKLE, V., WYCKOFF, S., BAROT, N., GONZALEZ-MARTINEZ, J., SARMA, S.

*Brain*

### Classification of Stereo-EEG Contacts in White Matter vs. Gray Matter Using Recorded Activity

2021

P. GREENE, ADAM LI, J. GONZÁLEZ-MARTÍNEZ, S. V. SARMA

*Frontiers in Neurology*

### Using network analysis to localize the epileptogenic zone from invasive EEG recordings in intractable focal epilepsy

2018

ADAM LI\*, B. CHENNURI\*, S. SUBRAMANIAN, R. YAFFE, S. GLISKE, S. WILLIAM, R. NORTON, A. JORDAN, K. ZAGHLOUL, S. INATI, S. AGRAWAL, J. HAAGENSEN, J. HOPP, C. ATALLAH, E. JOHNSON, N. CRONE, W. ANDERSON, Z. FITZGERALD, J. BULACIO, J. GALE, S. V. SARMA, J. GONZALEZ-MARTINEZ

*Network Neuroscience*

### MNE-ICALabel: Automatically annotating ICA components with ICLabel in Python

2022

ADAM LI, J. FEITELBERG, A. SAINI, M. SCHELTENNE

*Journal of Open Source Software*

## Neural Fragility of the Intracranial EEG Network Decreases after Surgical Resection of the Epileptogenic Zone

2021

ADAM LI, P. MYERS, N. WARSKI, K. GUNNARSDOTTIR, S. KIM, V. JIRSA, A. OICHI, H. OTUSBO, G. IBRAHIM, S. V. SARMA

*In Review at Journal of Neurosurgery*

## Learning sources of variability from high-dimensional observational studies

2023

ERIC W. BRIDGEFORD, JAEWON CHUNG, BRIAN GILBERT, SAMBIT PANDA, ADAM LI, CENCHENG SHEN, ALEXANDRA BADEA, BRIAN CAFFO, JOSHUA T. VOGELSTEIN

*ArXiv*

## Optimal design of experiments and adjustment sets for estimating causal effects

2023

ADAM LI, A. RIBEIRO, E. BAREINBOIM

*In progress*

## Multistage causal discovery in time-series

2023

ADAM LI, JAKOB RUNGE, A. RIBEIRO, E. BAREINBOIM

*In progress*

## Random Forests for Adaptive Nearest Neighbor Estimation of Information-Theoretic Quantities

2023

ADAM LI, SAMBIT PANDA, YUXIN BAI, A. RIBEIRO, R. PERRY, R. MEHTA, R. GUO, E. YEZERETS, J. ARROYO, MIKE POWELL, H. HELM, C. SHEN, J. VOGELSTEIN

*Arxiv - to submit to TMLR*

## Patents

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### Quantitative epilepsy diagnosis from scalp EEG

*Provisional Patent*

NIRAV BAROT, JORGE GONZALEZ-MARTINEZ, KRISTIN GUNNARSDOTTIR, KHALIL HUSARI, ADAM LI, PATRICK MYERS, SRIDEVI SARMA

*Sept. 6th, 2022*

### Identifying the Epileptogenic Zone using Network Fragility Theory

*Patent Application No. 16/348,766*

SRIDEVI SARMA, ADAM LI, JORGE GONZALEZ

*Nov. 11th, 2017*

### Method and device for localizing epileptogenic zones

*Patent Application No. 17/597,211*

SRIDEVI SARMA, ADAM LI

*Feb. 11th, 2019*

### GEAR (Game Enhancing Augmented Reality) - A lower limb alternative control interface for computers.

*Patent Application No. 16/309,183*

GYORGY LEVAY, ADAM LI, NATE TRAN

*May 23rd, 2016*

## Peer-Reviewed Conference Proceedings

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### Causal discovery from observational and interventional data across multiple environments

*In Review at Neurips 2023*

ADAM LI, AMIN JABER, ELIAS BAREINBOIM

*New Orleans, Louisiana USA 2023*

### Temporal and morphological characteristics of high-frequency oscillations in an acute in vivo model of epilepsy

*IEEE EMBS - EMBC*

SOPHIA ZHAI, DANIEL EHRENS, ADAM LI, FADI ASSAF, YITZHAK SCHILLER, SRIDEVI V. SARMA, RACHEL JUNE SMITH

*Glasgow, Scotland UK 2022*

### Network Fragility in Seizure Genesis in an Acute in vivo Model of Epilepsy

*IEEE EMBS - EMBC*

ADAM LI, DANIEL EHRENS, FADI AEED, YITZHAK SCHILLER, SRIDEVI V SARMA

*Montreal, Canada 2020*

### Evaluating Invasive EEG Implantations in Medically Refractory Epilepsy with Functional Scalp EEG Recordings and Structural Imaging Data

*IEEE EMBS - EMBC*

ANIL PALEPU, ADAM LI, ZACHARY FITZGERALD, KATHERINE HU, JULIA COSTACURTA, JUAN BULACIO, JORGE MARTINEZ-GONZALEZ, SRIDEVI V SARMA

*Berlin, Germany 2019*

### Virtual Cortical Stimulation Mapping of Epilepsy Networks to Localize the Epileptogenic Zone

*IEEE EMBS - EMBC*

ADAM LI, SRIDEVI V SARMA, ZACHARY FITZGERALD, JENNIFER HOPP, EMILY JOHNSON, NATHAN CRONE, JUAN BULACIO, JORGE MARTINEZ-GONZALEZ, SARA INATI, KAREEM ZAGHLOUL

*Berlin, Germany 2019*

### Linear Time-Varying Model Characterizes Invasive EEG Signals Generated from Complex Epileptic Networks

*IEEE EMBS - EMBC*

ADAM LI, KRISTIN M. GUNNARSDOTTIR, SARA INATI, KAREEM ZAGHLOUL, JOHN GALE, JUAN BULACIO, JORGE MARTINEZ-GONZALEZ, SRIDEVI SARMA

*Jeju, South Korea 2017*

## **Fragility in epileptic networks: The epileptogenic zone**

ADAM LI, SARA INATI, KAREEM ZAGHLOUL AND SRIDEVI SARMA

*American Control Conference*

*Seattle, WA 2017*

## **Estimating Unmeasured Invasive EEG Signals Using a Reduced Order Observer**

KRISTIN M. GUNNARSDOTTIR, ADAM LI, JUAN BULACIO, JORGE GONZALEZ-MARTINEZ, SRIDEVI V. SARMA

*IEEE EMBS - EMBC*

*Jeju, South Korea 2017*

## Citeable Scientific Software

**mne-python** [<https://github.com/mne-tools/mne-python>]

2022

10.5281/ZENODO.592483 (SEE ONLINE FOR FULL AUTHOR LIST)

**pybv – A lightweight I/O utility for the BrainVision data format.**

2022

[<https://github.com/bids-standard/pybv>]

APPELHOFF, S., BRUNNER, C., STENNER, T., HOLDGRAF, C. R., HÖCHENBERGER, R., **LI, ADAM**, ALDAY, P., & PRADHAN, A.

**mne-connectivity (Version 0.2.0)** [<https://github.com/mne-tools/mne-connectivity>]

2022

**LI, A.**, MCCLOY, D., LARSON, E., WESTNER, B., KRONER, A., & GRAMFORT, A.

**mne-bids (Version 0.10.0)** [<https://github.com/mne-tools/mne-bids>]

2022

APPELHOFF, STEFAN, ET AL., **LI, ADAM**, GRAMFORT, ALEXANDRE, & JAS, MAINAK.

## Open Source Software Volunteering

I have extensive experience working in asynchronous teams on code reviews, unit testing with **pytest**, continuous integration, API designs and discussion and implementing robust code in **Python, Cython and C++**. I have also worked with **JavaScript**. All our organizations are dedicated to diversity, equity and inclusion and commonly host office hours, community development and public forums.

**PyData/Sparse** | <https://github.com/pydata/sparse>

Google Summer of Code 2023

CONTRIBUTOR - SPARSE NDARRAYS IN C++ AND PYTHON

2023 — Present

**Scikit-Tree** | <https://github.com/neurodata/scikit-tree>

MAINTAINER - EFFICIENT DECISION TREE MODELS BEYOND SKLEARN IN PYTHON

2022 — Present

**PyWhy** | <https://github.com/py-why>

CONTRIBUTOR - CAUSALITY DISCOVERY, IDENTIFICATION, ESTIMATION AND REFUTATION IN PYTHON

2022 — Present

**scikit-learn** | <https://github.com/scikit-learn/scikit-learn>

Integration of Oblique Trees

CONTRIBUTOR - MACHINE LEARNING IN PYTHON, CYTHON, C++

2021 — Present

**MNE-ICALabel** | <https://github.com/mne-tools/mne-icalabel>

MAINTAINER - AUTOMATIC ICA LABELING WITH PYTHON

2022 — Present

**MNE-Connectivity** | <https://github.com/mne-tools/mne-connectivity>

Google Summer of Code 2021

MAINTAINER - PYTHON CONNECTIVITY ANALYSIS FOR NEURAL DATA

2021 — Present

**Stereotactic EEG Kit (SEEK)** | <https://github.com/ncsl/seek>

MAINTAINER - DATA PIPELINE FOR NEUROIMAGING DATA

2019 — 2021

**MNE-HFO** | <https://github.com/adam2392/mne-hfo>

MAINTAINER - DIGITAL SIGNAL PROCESSING OF HIGH-FREQUENCY OSCILLATIONS IN PYTHON

2020 — 2022

**BIDS** | <https://github.com/bids-standard/bids-specification>

ELECTROPHYSIOLOGY TEAM MEMBER - OPEN-ACCESS SCIENTIFIC DATA ORGANIZATION AND API DESIGN

2019 — Present

**MNE-Python** | <https://github.com/mne-tools/mne-python>

CORE DEVELOPER - ELECTROPHYSIOLOGICAL DIGITAL SIGNAL PROCESSING AND VISUALIZATION IN PYTHON

2019 — Present

**MNE-BIDS** | <https://github.com/mne-tools/mne-bids>

CORE DEVELOPER - ROBUST AND EFFICIENT DATA LOADING AND FORMATTING FOR MEG/EEG/IEEG

2019 — Present

**pybids** | <https://github.com/https://github.com/bids-standard/pybids>

CONTRIBUTOR - QUERYING OF LARGE-SCALE FORMATTED DATASETS

2019 — Present

**bids-validator** | <https://github.com/https://github.com/bids-standard/bids-validator>

CONTRIBUTOR - VALIDATION OF BIDS DATASETS ACCORDING TO A STANDARD

2019 — Present

**pyDMD** | <https://github.com/mathLab/PyDMD>

CONTRIBUTOR - DYNAMIC MODE DECOMPOSITION IN PYTHON

2019 — 2020

**The Virtual Brain (TVB)** | <https://github.com/the-virtual-brain/tvb-root>

CONTRIBUTOR - COMPUTATIONAL NEUROSCIENCE WHOLE-BRAIN SIMULATION PLATFORM

2017 — 2018

## Honors & Awards

2022	<b>Schmidt Science Fellowship Finalist</b> , Post-doctoral Fellowship	Washington, DC
2020	<b>ARCS Chapter Fellowship</b> , 1 of 3 awardees - Pre-doctoral Fellowship	Washington, DC
2019	<b>Whitaker Conclusion Grant</b> , 1 of 5 teams awarded \$100k - Outreach Fellowship	USA
2017	<b>Chateaubriand STEM Research Fellowship</b> , Pre-doctoral international fellowship	France
2017	<b>Whitaker Research Fellowship</b> , Pre-doctoral international fellowship	France
2017	<b>NSF</b> , Graduate Research Fellowship	USA
2016	<b>NSF</b> , Graduate Research Fellowship - Honorable Mention	USA
2016	<b>Intel Cornell Cup</b> , 1st place	USA
2015	<b>NIH NETI</b> , Graduate training fellowship	Baltimore
2015	<b>Frontiers of Innovation Scholars</b> , undergraduate research fellowship	UCSD
2014	<b>IDEA Center Scholar</b> , undergraduate research fellowship	UCSD
2014	<b>Gordon Fellow</b> , undergraduate leadership award	UCSD
2014	<b>ASAIO Student Design Competition</b> , top 27 in USA	USA
2013	<b>Amgen Scholar</b> , undergraduate research fellowship	UCSD
2013	<b>Gordon Leadership Scholar</b> , undergraduate leadership	UCSD
2012	<b>CalIT Scholar</b> , undergraduate research fellowship	UCSD

## Entrepreneurial Awards

2022	<b>KPCB (Kleiner Perkins VC) Engineering Fellow</b> ,
2021	<b>NSF SBIR Phase I Grant</b> ,
2019	<b>Maryland Innovative Initiative (MII) Grant</b> ,
2018	<b>NSF SBIR Phase I Grant</b> ,
2014	<b>NCIIA E-Team Grant</b> ,
2013	<b>Health and Life Sciences Grant</b> ,
2013	<b>Von Liebig NSF I-Corps Fellow</b> ,

## Grants - Total=\$644,000

<b>NSF Computing Innovation Fellowship Grant (2127309) - Postdoctoral Fellowship</b>	\$150k
January 1, 2022 — January 1, 2024   Causal Reinforcement Learning with Unknown Causal Structure: An Application to Treatment of Drug-Resistant Epilepsy Patients. Awarded 69 out of 238 ( 28% Rate).	
<b>NSF SBIR Phase-I Grant (2112011) - Co PI</b>	\$256k
May 15, 2021 — April 30, 2022   Improving Diagnosis of Epilepsy by Applying Network Analytics to Non-Seizure Scalp EEG Data	
<b>Whitaker Phase I Conclusion Grant - Co PI</b>	\$100k
Jan. 2019 — Jan. 2023   Outreach for Biomedical Science story-telling around the world. 1 of 5 awardee groups.	
<b>NSF Graduate Research Fellowship Program (DGE 1746891)</b>	\$138k
2016 — 2021   Improving Diagnosis of Epilepsy by Applying Network Analytics to Non-Seizure Scalp EEG Data	

## Experience

### RESEARCH EXPERIENCE

#### Postdoctoral Research Scientist, Causal AI Lab, Columbia University

Jan. 2022 — Jan. 2024

#### Advisor: Dr. Elias Bareinboim

- Develop causal machine learning method for optimal adjustment in uncertain causal settings for estimating causal quantities.
- Develop causal machine learning Python software in collaboration with Amazon, Microsoft and IBM researchers at Py-Why.

## Graduate Research Assistant, Neuromedical Control Systems Lab, Johns Hopkins University

Aug. 2015 — Dec. 2021

### Advisor: Dr. Sridevi Sarma

- Coordinated data pipeline of electrophysiological and clinical data of epilepsy patients from 5 hospitals in coordination with clinicians in setting up a HIPAA-compliant server for highly parallelized data analysis, resulting in **Nature Neuroscience publication**.
- Identified and developed signal processing and statistical analysis of clinical multi-modality datasets that resulted in over 400 pull requests merged in open-source packages with up to 1,000's of users (**Git, CI, unit-testing, software design & development**)
- Developed statistical and machine learning models on multivariate time series EEG, clinical and neuroimaging MRI and CT data to analyze different seizure localization models (model building & validation with **scikit-learn/keras/pytorch**, data wrangling with **pandas,numpy**).
- Coordinated open-source discussions on EEG and iEEG data formatting in a 79 international team of researchers on Github (**technical communication of the Brain Imaging Data Structure - BIDS**)
- Coordinated a team of engineers to develop a structure-aware Random Forest algorithm in Python and Cython to perform manifold learning (to be implemented as a PR into **scikit-learn**).

## Visiting Research Scientist, Theoretical Neurosciences Group, Aix-Marseille University

Sep. 2017 — Sep. 2018

### Advisors: Dr. Viktor Jirsa, Dr. Sridevi Sarma

- Developed a high-throughput parallelized data pipeline for multi-modality 3D brain imaging using **Bash and Snakemake (Python DAG engine)** resulting in robust 3D brain visualizations.
- Designed **nonlinear biophysical simulation models** with **linear dynamical systems analysis** to predict the surgical outcome in epileptic patients resulting in a paper to be submitted to Brain
- Developed a supervised deep learning pipeline using nonlinear computational modeling and a Recurrent-CNN model to perform patient-specific seizure detection (**Python/Keras/Pytorch**)
- Implemented open-source code on *The Virtual Brain* (a Human Brain Project) for generating observational noise, analysis of simulated source signals and scientific demos

## WORK EXPERIENCE

### PhD Software Engineering Intern at Uber (KPCB Fellow)

Sep. 2022 — Dec. 2022

- Part of the Kleiner Perkins Fellows Program, a prestigious program partnering the best engineers with startups (acceptance rate < 5%).
- Led research & development of a causal machine learning model (applied to 100M+ samples) to dynamically match users with promotional campaigns demonstrating a potential **3-8% increase in profit margins for USA Eats platform**.
- Developed solution to enable Python3.8+ in PySpark and SparkMagic Jupyter notebooks, enabling users to upgrade and reduce technical debt in data science workflows with Python, Hive and Hadoop.

### Co-Founder and CTO, Neurologic Solutions Corp.

Sep. 2018 — Dec. 2021

- Raised over \$600K to-date (Two NSF SBIR Phase I \$225k, Mayland Innovation Initiative \$150k, \$10K JHTV Pitch Competition).
- Filed provisional patents and full patents in the USA, European and Japan markets through collaboration with Johns Hopkins Technology Ventures (JHTV).
- Led product development of software product with team of 3 software engineers for helping clinicians localize the epileptogenic zone in epileptic patients (AWS infrastructure with Kubernetes and Flux, REST API, algorithm development, UX design and data engineering).
- Led **510k FDA** approval process with a team of 5 engineers, consultants and advisors involving risk analysis, software requirements, design specifications, and user-testing (unit testing, continuous integration, and software documentation).

### Co-Founder, Biometrics Analytics

Jun. 2012 — Sep. 2015

- Researched & developed novel ways to evaluate Parkinson's Disease using biometric sensors and robust data analysis; led team in data acquisition of human data, data analysis and statistical analysis using MATLAB and Python.
- Led data acquisition of clinical data and full-body pose data from the Microsoft Kinect. Performed data analysis using machine learning and image processing algorithms (MATLAB, Python and C++).
- Raised over \$20,000 and obtained an IRB for a pilot clinical human study, resulting in the Gordon Fellowship Award for outstanding engineering leadership (awarded to 3 students/year at UCSD).
- Worked in a team of 4 for the Von Liebig NSF I-Corps Program and the NCIIA Entrepreneurship Program (15% acceptance rate) for startup incubation.

### Data Processing Intern, West Health Institute 501(C)

Jun. 2014 — Jun. 2015

- Wrote pymongo queries running on an event scheduler (Python, MongoDB) that provided computed features of game play and behavior for the clinical team to analyze behavior during experiments.
- Developed clinical web forms using HTML, CSS, JavaScript, which are then linked to an AWS server running MongoDB with Node.js (git and general version control).
- Built an Android application that created a custom launch screen for the clinical team with Java and XML.
- Researched and recommended technological improvements to data collection that could be incorporated into the analytics group at the institute for the treatment of Autism Spectrum Disorder.

## Project Team Leader, West Health Institute 501(C)

Jun. 2014 — Jun. 2015

- Wrote pymongo queries running on an event scheduler (Python, MongoDB) that provided computed features of game play and behavior for the clinical team to analyze behavior during experiments.
- Developed clinical web forms using HTML, CSS, JavaScript, which are then linked to an AWS server running MongoDB with Node.js (git and general version control).
- Built an Android application that created a custom launch screen for the clinical team with Java and XML.
- Researched and recommended technological improvements to data collection that could be incorporated into the analytics group at the institute for the treatment of Autism Spectrum Disorder.

## Process Development Engineering Intern and College Ambassador, Genentech

Aug. 2010 — Aug. 2011

- Collaborated with Genentech College Programs to improve online engagement by 60%, while coordinating events with directors and human resources that drew in over 200 attendees.
- Implemented a new batch control process using Rockwell Automation and PLCs to automate chromatography purification process (used SQL and Python).

## Teaching

### Teaching Assistant

Baltimore, MD

NEURODATA DESIGN COURSE (BME 580.638) - DEVELOP OPEN SOURCE CONTRIBUTIONS TO PYTHON SCIENTIFIC COMPUTING

Sep. 2019 — Jan 2020

LIBRARIES

### Head Teaching Assistant

Baltimore, MD

SYSTEMS BIOENGINEERING II COURSE (BME 580.424) - 150 STUDENTS AND 6 TAs

Jan. 2019 — May 2019

### Teaching Assistant

La Jolla, CA

DATA STRUCTURES COURSE (CSE 12) - C, C++

Sep. 2014 — May 2015

## Conference Presentations and Posters

### Neural Fragility of the Intracranial EEG Network Decreases Intraoperatively after Surgical Resection of the Epileptogenic Zone in Children with Epilepsy

Chicago, USA

AMERICAN EPILEPSY SOCIETY

Dec. 2021

ADAM LI, PATRICK MYERS, CHESTER HUYNH, NEBRAS WARSI, KRISTIN M. GUNNARSDOTTIR, SOO KYUNG S. KIM, VIKTOR JIRSA, SRIDEVI V. SARMA AND GEORGE M. IBRAHIM

### Neural Fragility as an EEG Marker of the Seizure Onset Zone

Chicago, USA

AMERICAN EPILEPSY SOCIETY

Dec. 2021

PATRICK MYERS, ADAM LI, C. HUYNH, Z. FITZGERALD, I. CAJIGAS, D. BRUSKO, J. JAGID, A. CLAUDIO, A. KANNER, J. HOPP, S. CHEN, J. HAAGENSEN, E. JOHNSON, W. ANDERSON, N. CRONE, S. INATI, K. ZAGHLOUL, J. BULACIO, J. GONZALEZ-MARTINEZ, S. V. SARMA

### Neural Fragility of Intracranial EEG Networks: Towards an EEG Fingerprint for the Seizure Onset Zone

Baltimore, USA

NEUROMATCH 3.0 CONFERENCE

Oct. 2020

ADAM LI, C. HUYNH, Z. FITZGERALD, I. CAJIGAS, D. BRUSKO, J. JAGID, A. CLAUDIO, A. KANNER, J. HOPP, S. CHEN, J. HAAGENSEN, E. JOHNSON, W. ANDERSON, N. CRONE, S. INATI, K. ZAGHLOUL, J. BULACIO, J. GONZALEZ-MARTINEZ, S. V. SARMA

### Automated classification of stereo-EEG contacts in white matter versus gray matter using recorded activity

Montreal, Canada (virtual)

IEEE ENGINEERING IN MEDICINE AND BIOLOGY

Jul. 2020

ADAM LI, PATRICK GREENE, JORGE MARTINEZ-GONZALEZ, SRIDEVI SARMA

### Towards Automatic Localization and Anatomical Labeling of Intracranial Depth Electrodes in Brain Images

Montreal, Canada (virtual)

IEEE ENGINEERING IN MEDICINE AND BIOLOGY

Jul. 2020

ADAM LI, CHESTER HUYNH, JORGE MARTINEZ-GONZALEZ, SRIDEVI SARMA

## Semi-Automatic SEEG Localization and Interactive Neuroimage Visualization in Epilepsy Patients

ORGANIZATION FOR HUMAN BRAIN MAPPING

ADAM LI, CHESTER HUYNH, CHRISTOPHER COOGAN, SRIDEVI SARMA

Montreal, Canada

June 23 - July 3, 2020

## MNE-BIDS: MNE-Python + BIDS = easy dataset interaction (Version 1.0.1)

ORGANIZATION FOR HUMAN BRAIN MAPPING

STEFAN APPELHOFF, ADAM LI, ET AL. - 10.5281/ZENODO.3891836

Montreal, Canada

June 23 - July 3, 2020

## Identification of the Epileptogenic Zone from Intracranial Electrocorticography with a Novel Network Fragility Algorithm in Patients with Temporal-Lobe Epilepsy

AANS

IAHN CAJIGAS, DAMIAN BRUSKO, ANGEL CLAUDIO, ADAM LI, SRIDEVI SARMA, ANDRES KANNER, JONATHAN JAGID

Virtual

Jun. 2020

## Application of A Network Fragility Algorithm for the Identification of the Epileptogenic Zone from Intracranial Electrococtography in Patients with Temporal-Lobe Epilepsy

AMERICAN EPILEPSY SOCIETY

ADAM LI, IAHN CAJIGAS, DAMIAN BRUSKO, ANGEL CLAUDIO, ANDRES KANNER, JONATHAN JAGID, SRIDEVI SARMA

Baltimore, MD

Nov. 2019

## Using personalized brain models to augment datasets for deep learning

WORKSHOP ON MACHINE LEARNING AND COMPUTER VISION

ADAM LI, SRIDEVI SARMA, VIKTOR JIRSA

Janelia, HHMI, USA

Apr. 2019

## Integrating Large Brain Networks and Network Analysis to Understand The Epileptogenic Zone

ORGANIZATION FOR COMPUTATIONAL NEUROSCIENCE

ADAM LI, MARMADUKE WOODMAN, SRIDEVI SARMA, VIKTOR JIRSA

Seattle, WA

Jul. 2018

## Integrating Large Brain Networks and Network Analysis to Understand The Epileptogenic Zone

ADVANCED COURSE ON DATA SCIENCE & MACHINE LEARNING

ADAM LI, SRIDEVI SARMA, VIKTOR JIRSA

Tuscany, Italy

Jul. 2018

## T101. Use of a quantitative algorithm to help predict seizure lateralization in a patient with bitemporal epilepsy and responsive nerve stimulation

CLINICAL NEUROPHYSIOLOGY

JENNIFER J. HAAGENSEN, STEPHANIE CHEN, JENNIFER L. HOPP, ADAM LI, SRIDEVI SARMA

Seattle, WA

2018

## Invited Talks

### Robust Causal Discovery

JOHNS HOPKINS NEURODATA LAB - LAB MEETING

ADAM LI, A. RIBEIRO, E. BAREINBOIM

Baltimore, MD

08/26/2022

### Neural Fragility as an EEG Marker of the Seizure Onset Zone

UCSF EPILEPSY CENTER - JOURNAL CLUB

ADAM LI, C. HUYNH, Z. FITZGERALD, I. CAJIGAS, D. BRUSKO, J. JAGID, A. CLAUDIO, A. KANNER, J. HOPP, S. CHEN, J. HAAGENSEN, E.

JOHNSON, W. ANDERSON, N. CRONE, S. INATI, K. ZAGHLOUL, J. BULACIO, J. GONZALEZ-MARTINEZ, S. V. SARMA

San Francisco, CA

09/30/2021

## Leadership and Volunteer Work

### Google Summer of Code - Mentor

MENTOR NEW DEVELOPERS IN CONTRIBUTING TO OPEN-SOURCE SOFTWARE.

2022 — Present | Worldwide

### EverydayBME - Co-Founder

DESIGN AND AGGREGATE DIGITAL STORYBOOKS OF BIOMEDICAL SCIENCE (RESEARCHERS, STUDENTS, ETC.) OVER THE WORLD.

WORKED WITH BMESDIVERSITY AND WHITAKER FOUNDATION TO HIGHLIGHT UNDER-REPRESENTED GROUPS IN STEM.

2019 — Present | Worldwide



## AAMPLIFY 501(C) - Director of Leadership

2017 — Present | San Francisco, CA

PLANNED AND IMPLEMENT A SUMMER LEADERSHIP AND ADVOCACY PROGRAM FOR UNDER-SERVED AAPI YOUTH. ALSO INVOLVED IN RAISING OVER \$5000 AS A NON PROFIT ORGANIZATION.

## Engineering & Medicine Exchange - Co-Founder

2016 — 2017 | JHU

PLAN EVENTS FOR COLLABORATIONS BETWEEN ENGINEERING, MEDICINE AND PUBLIC HEALTH. ARDUINO WORKSHOP, MACHINE LEARNING IN HEALTHCARE WORKSHOP, AND ELECTRONIC HEALTH RECORDS FOR ENGINEERING WORKSHOP.

## Yale School of Management Pre-MBA Program - Global Pre-MBA Leadership Program

2014 | Yale

PLACED 3RD IN AUDUBON BUSINESS CONCEPT PITCH PLAN, AND 2ND IN AUDIENCE CHOICE AWARD.

## BME PhD Council - Social Chair

2016 — 2017 | JHU

COORDINATE AND PLAN EVENTS FOR INCREASING COLLABORATION WITHIN DEPARTMENT.

## Alpha Kappa Psi - Class President

2012 — 2014 | UCSD

LED CLASS OF 16 INDIVIDUALS.

# Mentoring

## Anil Palepu - Spectral analysis of scalp EEG data

Neuromedical Control Systems Lab

UNDERGRAD - NOW MIT PHD

2015-2017

## Chester Huynh - Automating iEEG electrode localization and manifold trees

Neuromedical Control Systems Lab

UNDERGRAD - NOW MICROSOFT SOFTWARE ENGINEERING

2018-2021

## Patrick Myers - Software development of EZTrack and scalp EEG analysis

Neurologic Solutions

MS STUDENT AND DIRECTOR OF PRODUCT DEVELOPMENT - NOW PHD AT JHU

2019-2022

## Sophia Zhai - Morphology of high frequency oscillations

Neuromedical Control Systems Lab

UNDERGRAD

2019-2022

## Jordan Drew - Estimating source-space time-varying linear dynamical system

Google Summer of Code

PHD STUDENT AT UNIVERSITY OF WASHINGTON

2022

## Aaron Youn - Automating independent component analysis

Neuromedical Control Systems Lab

HIGH SCHOOL STUDENT

2022 - Present

## Ikshita Sathanur - Blood cell correlates to COVID-19 symptoms

Polygence

HIGH SCHOOL STUDENT AT EASTLAKE HIGH SCHOOL

2022

## Jong Shin - Decision trees and open source software

Neurodata Lab

RESEARCH ASSISTANT AT JOHNS HOPKINS UNIVERSITY

2021 - Present

## Jacob Feitelberg - Deep neural networks for automatic noise labeling in EEG

Neuromedical Control Systems Laboratory

RESEARCH ASSISTANT AT JOHNS HOPKINS UNIVERSITY

2020 - 2022

# Skills

**Programming** Bash, Python, C++, Cython, MATLAB, Scikit-learn, Pandas, Numpy, Keras, Pytorch

**Misc.** Open-source, Git, Software Design and Engineering, Software Quality Control, Software Testing