Vivek Gopalakrishnan

Curriculum Vitae

Johns Hopkins University
Baltimore, MD
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v715

Education

2019–present **MSE, Biomedical Engineering**, *Johns Hopkins University*, Baltimore, MD.
GPA: N/A, Focus Area: Biomedical Data Science

2017–present **BS, Biomedical Engineering**, *Johns Hopkins University*, Baltimore, MD.
GPA: 3.73, Dean's List (2017-2019)

Experience

2018–present **Research Assistant**, *Johns Hopkins University*, Neurodata Lab.
- Developed novel methodology for high-dimensional regression with Random Forest
- Discovered neuro-connectively similar subtypes of autism using joint embeddings of multi-network connectomes

2018–2019 **Research Assistant**, *Ragon Institute of MGH, MIT and Harvard*, Ghebremichael Lab.
- Investigated the performance of different ROC models in binary and multi-class settings
- Identified biomarkers for antiretroviral toxicity by applying statistical learning methods to HIV-patient data

2017–2018 **Design Team Member**, *Johns Hopkins University*, Dept. of Biomedical Engineering.
- Developed machine learning algorithm to predict the onset of lung failure in pediatric patients

2017 **Summer Research Intern**, *Fondazione Bruno Kessler*, Trento, Italy.
- Created autonomous data collection vehicles by mounting spectral cameras on drones
- Implemented deep learning algorithms to quantitatively assess environmentally-related crop damage from image data

2016-2017 **Independent Researcher**, *Tufts University*, Walt Lab.
- Used next-generation sequencing to study the effect of flossing on the human oral microbiome
- Analyzed high-dimensional genomic data using unsupervised clustering and Markov chain-based forecasting models

Publications and Presentations

2019 **Vivek Gopalakrishnan**, Joshua T. Vogelstein, *Towards Discovering Heterogeneity in Autism via Multi-Network Connectomics*, **Conference: BMES 2019**

2019 Nian Wang, Robert J. Anderson, David G Ashbrook, **Vivek Gopalakrishnan**, Youngser Park, Carey E. Priebe, Yi Qi, Joshua T. Vogelstein, Robert W. Williams, G. Allan Johnson, *Node-Specific Heritability in the Mouse Connectome*, Submitted to **Neuron**, https://doi.org/10.1101/701755

2019 **Vivek Gopalakrishnan**, Musie Ghebremichael, *Comparison of the Accuracy of Different Receiver Operating Characteristic Models*, **preprint**

2018 Musie Ghebremichael, Jong Soo Lee, **Vivek Gopalakrishnan**, Elijah Paintsil, *A comparison of machine learning techniques for classification of HIV patients with antiretroviral therapy-induced mitochondrial toxicity from those without mitochondrial toxicity*, **Journal: BMC Public Health**

Grants and Awards

2019 **Pistrito Fellowship Recipient**, *Johns Hopkins University*, Dept. of Computer Science.

2018 **Recipient**, *Amazon Web Services Cloud Credits for Research Grant*.

2017 **Second Place Winner**, *Intel International Science and Engineering Fair*, Microbiology.

2017 **Semi-Finalist**, *Regeneron Science Talent Search*.

Skills

Computing Python, R, C++

Other Unix, git, LaTeX

Leadership

2018–present **Head PILOT Leader**, *Johns Hopkins University*.
Lecturer/Tutor for Linear Algebra and Multivariable Calculus

2017–present **Music Director**, *Johns Hopkins University*, AllNighters.
Compose original arrangements and lead rehearsals as part of the AllNighters, JHU's premeir all-male A Cappella group