PRADEEP VARATHAN PUGALENTHI

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LinkedIn Page   ·   GitHub Page

Summary of Qualifications

- Exceptional understanding of biology, statistics, machine learning, high throughput computing ,cloud computing and neuroimaging analysis
- Extensive knowledge of network analysis and statistical software
- Well-developed ability to conduct presentations and taking information to apply the acquired knowledge to interpret trends in data
- Experienced leader : Founded and occupied professional student registered organizations and lead research groups in the clubs to national conferences

Work Experience

Teaching assistant, Indiana University, Indianapolis   Aug 2020 – Present
- Assisting and lecturing for the course Biomedical Informatics for undergraduate and graduate students learning multiple software including **BlueSky** and Excel.

Research assistant, Indiana University, Indianapolis   Aug 2019 – Present
- Worked on identification of Alzheimer's disease possible pathways from ROSMAP data and trying to build relation between imaging and cognitive scores for genetic correlation using **Cytoscape**, as a network analysis tool and **R** for statistical inference purpose.
- Analyzed the genome-wide analysis study from International Genomics of Alzheimer's Project using statistical methods including **SMR**, **HEIDI** and **TWAS** by creating a pipeline scripted on **Linux** using the **plink** toolkit and **SMR** toolkit
- Using **DeepSEA** deep learning model in **python** with the help of **pytorch** to investigate Alzheimer's Disease variants profile

Barista, Barnes and Nobles Café   Nov 2019 – Feb 2019
- Handled financial transactions and managed the bar; Mentored new employees on handling the bar and restocking practices

Recent Research Projects

Immune Inspect , Indiana University, Indianapolis
- Created an R package **ImmuneInspect** for easy analysis of the GEO2R-processed microarray data in respect to immune system as part of the coursework project and has been added to Artic Code Vault 2020.

Design Sprint , Indiana University, Indianapolis
- Researched on ideas to curb homelessness and hunger issues around the city as a group and presented to the deputy mayor of Indianapolis (Article)

Polygenic Risk Score Analysis, Indiana University, Indianapolis
- Worked on NIH funded project on predicting polygenic risk score for Alzheimer's disease on ADNI, ROSMAP and IGAP using R packages such as **PRSice**, **lassosum** and **LDPred2**.

Internship Experience

Research Intern, Basal Ganglia Explorers, IIT madras   Jul 2018 – Sep 2018

- Created a model network of neurons depending on the subject conditions to characterize various energy requirements of a particular disease. (Click here for more info)

Research Intern, Rajiv Gandhi Centre for Biotechnology   Nov 2017– Dec 2017

- Placed on circulation to learn various techniques, study signaling pathways unique for neuronal stem cells and witness animal experiments.
- Worked on **Cytoscape** to analyze gene microarray networks from the experimental microarray data of neuronal stem cells.

Undergraduate Research Assistant, National Institute of Technology Calicut   Jul 2016– May 2019

- Comparative study of mRNA expression profile of stemness regulating transcription factors in cancer tissue and cell lines.(In collaboration with MVR Cancer Research Institute, Kerala)
- Lead the Curated Database for Ischemic Stroke : Mitochondria Sector and built a curated database for ischemic stroke in terms of mitophagy and finding an established links between the genetic study with **MySQL**
- Worked with bacterial cells resistance on different drugs by using MIC studies.
- Used **bibliometrics** tools and python packages to work on **data mining** research for medicinal compounds from mangrove environment for neurodegenerative diseases

Paper's Published

Meta-analysis on big data of bioactive compounds from mangrove ecosystem to treat neurodegenerative disease by Benu George, Pradeep Varathan and Suchitra T.V in Scientometrics, Springer (DOI 10.1007/s11192-020-03355-2)

Identification of functionally connected multi-omic biomarkers for Alzheimer's Disease using modularity-constrained Lasso by Linhui Xie , Pradeep Varathan, Kwangsik Nho, Andrew J. Saykin, Paul Salama and Jingwen Yan in Plos ONE special issue. (DOI 10.1371/journal.pone.0234748)

Paper's in process

Virtual screening of plant-based ligands as Coronavirus disease Covid-19 inhibitors by Benu George, Pooja S, Pradeep Varathan, Shilpa V and Suchitra T.V (code attached)

Integrative analysis of eQTL and GWAS summary statistics reveals novel genes related to Alzheimer's Disease by Pradeep Varathan, Priyanka G, Tanner Jacobs ,Andrew J. Saykin and Jingwen Yan

Positions Held

President, Bioinformatics Club, IUPUI   Apr 2020 - Present

- Managing and leading the club to conduct safe and worthy content for events.
- Corresponding and managing tasks with other clubs and officials

Event Coordinator, Bioinformatics Club, IUPUI   Nov 2019 – Feb 2019

- Reserved and conducted events as planned by the club members
- Managed the club's Instagram page
- Helped to maintain the finances within the club

Education

- PhD Candidate Student in **Bioinformatics** with a minor in Neuroscience,
  Indiana University, Indianapolis
  Fully funded with scholarship and stipend
  Aug 2019 – Present
  Tentative CGPA – 3.8/4

- Bachelor of Technology in **Biotechnology**,
  National Institute of Technology Calicut, Calicut
  Scholarship from Central Government of India
  Aug 2015 – May 2019
  CGPA – 8.62/10