

Prakash Chourasia

Department of Computer Science
Georgia State University
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RESEARCH INTERESTS

- Machine Learning, Artificial Intelligence, Data Mining, Algorithms, Bioinformatics

EDUCATION

- Georgia State University, Atlanta Fall 2022 - Present
Ph.D (Computer Science) , **Advisor:** [[Dr. Murray Patterson](#)] GPA:3.75
- Georgia State University, Atlanta Fall 2014 - Spring 2016
Master of Science (Computer Science), **Advisor:** [[Dr. Ying Zhu](#)] GPA:3.54
- Rajiv Gandhi Technical University Bhopal August 2007 - June 2011
Bachelor of Engineering (Information Technology), **Advisor:** [[Lucky Sharma](#)] Percentage: 70.4

PUBLICATIONS

- Conference Papers (17)

- 17 **Prakash Chourasia**, Taslim Murad, Sarwan Ali, and Murray Patterson. "Enhancing t-SNE Performance for Biological Sequencing Data through Kernel Selection." International Symposium on Bioinformatics Research and Applications, ISBRA (2023).
- 16 Sarwan Ali, **Prakash Chourasia** and Murray Patterson. "PDB2Vec: Using 3D Structural Information For Improved Protein Analysis" International Symposium on Bioinformatics Research and Applications, ISBRA (2023).
- 15 Sarwan Ali, Haris Mansoor, **Prakash Chourasia** and Murray Patterson. "Hist2Vec: Kernel-Based Embeddings for Biological Sequence Classification." International Symposium on Bioinformatics Research and Applications, ISBRA (2023).
- 14 **Prakash Chourasia**, Zahra Tayebi, Sarwan Ali, and Murray Patterson. "Empowering Pandemic Response with Federated Learning for Protein Sequence Data Analysis." In 2023 International Joint Conference on Neural Networks (IJCNN), pp. 01-08. IEEE, 2023, "[A rank conference](#)" [[PDF](#)][[Slides](#)].
- 13 Zahra Tayebi, Sarwan Ali, **Prakash Chourasia**, Taslim Murad, and Murray Patterson. "T Cell Receptor Protein Sequences and Sparse Coding: A Novel Approach to Cancer Classification." ICONIP (2023), [[PDF](#)] "[A rank conference](#)".
- 12 Sarwan Ali, **Prakash Chourasia**, and Murray Patterson. "When Biology has Chemistry: Solubility And Drug Subcategory Prediction using SMILES Strings." International Conference on Learning Representation (ICLR), 2023, "[A* rank conference](#)" [[PDF](#)].
- 11 Ali, Sarwan, Babatunde Bello, **Prakash Chourasia**, Ria Thazhe Punathil, Pin-Yu Chen, Imdad Ullah Khan, and Murray Patterson. "Virus2Vec: Viral Sequence Classification Using Machine Learning." Conference on Health, Inference, and Learning (CHIL 2023), "[Selected for Oral presentation \(12% acceptance rate\)](#)" [[PDF](#)][[Slides](#)].
- 10 Taslim Murad*, **Prakash Chourasia***, Sarwan Ali*, and Murray Patterson. "Hashing2vec: Fast embedding generation for sars-cov-2 spike sequence classification." In Asian Conference on Machine Learning, pp. 754-769, 2023. ([32% acceptance rate](#)) [[PDF](#)].
* **Equal Contribution**
- 9 **Prakash Chourasia**, Sarwan Ali, Murray Patterson."Effect of Informative Initialization on the Quality of t-SNE For Biological Sequences" IEEE BigData 2022. ([18.6% acceptance rate](#)) [[PDF](#)] [[Slides](#)].
- 8 Sarwan Ali, Taslim Murad, **Prakash Chourasia** and Murray Patterson. "Spike2Signal: Classifying Coronavirus Spike Sequences with Deep Learning". In the IEEE Eight International Conference on Big Data Computing Service and Applications (Big Data Service) 2022.
- 7 **Prakash Chourasia**, Sarwan Ali, Simone Ciccolella, Gianluca Della Vedova, and Murray Patterson. " Clustering SARS-CoV-2 variants from raw high-throughput sequencing read data". In the 11th International Conference on Computational Advances in Bio and medical Sciences, ICCABS (2021).
- 6 **Prakash Chourasia**, Taslim Murad, Zahra Tayebi, Sarwan Ali, and Murray Patterson. "Laws of Federated Learning for Bioinformatics" SIMBiG 2023 (Under Review)
- 5 Sarwan Ali, **Prakash Chourasia**, and Murray Patterson."Expanding Chemical Representation with k-mers and Fragment-based Fingerprints for Molecular Fingerprinting" SIMBiG 2023 (Under Review)
- 4 **Prakash Chourasia**, Heramb Lonkar, Sarwan Ali, and Murray Patterson."EPIC: Enhancing Privacy through Iterative Collaboration" SDM 2024 (Under Review)
- 3 **Prakash Chourasia**, Tamkanat Ali, Sarwan Ali, and Murray Patterson."DWFL: Enhancing Federated Learning through Dynamic Weights" AAAI 2023 (Under Review)

- 2 Sarwan Ali, Haris Mansoor, **Prakash Chourasia**, Imdad Ullah Khan, and Murray Patterson. "Preserving Hidden Hierarchical Structures: Poincaré Distance for Enhanced Genomic Sequence Analysis" AAAI 2023 (Under Review)
- 1 Taslim Murad, Sarwan Ali, **Prakash Chourasia**, and Murray Patterson. "Advancing Protein-DNA Binding Site Prediction" AAAI 2023 (Under Review)

▪ *Journals (5)*

- 5 **Prakash Chourasia**, Sarwan Ali, Simone Ciccolella, Gianluca Della Vedova, and Murray Patterson. "Reads2vec: Efficient embedding of raw high-throughput sequencing reads data." Journal of Computational Biology 30, no. 4 (2023): 469-491 [PDF].
- 4 Sarwan Ali, **Prakash Chourasia**, Zahra Tayebi, Babatunde Bello, and Murray Patterson. "ViralVectors: Compact and Scalable Alignment-free Virome Feature Generation" Medical & Biological Engineering & Computing 2023
- 3 Sarwan Ali, Babatunde Bello, **Prakash Chourasia**, Ria Thazhe Punathil, Yijing Zhou, and Murray Patterson. "PWM2Vec: An Efficient Embedding Approach for Viral Host Specification from Coronavirus Spike Sequences." MDPI Biology (2022).
Impact Factor: 5.07 [PDF].
- 2 Sarwan Ali, **Prakash Chourasia**, and Murray Patterson. "When Protein Structure Embedding Meets Large Language Models" Journal of Healthcare Informatics Research (under review)
Impact Factor: 5.9.
- 1 Sarwan Ali, **Prakash Chourasia**, and Murray Patterson. "From PDB Files to Protein Features: A Comparative Analysis of PDB Bind and STCRDAB datasets" MDPI Algorithms for Natural Computing Models (under review)
Impact Factor: 2.3.

TEACHING AND PROFESSIONAL EXPERIENCE

TEACHING EXPERIENCE

- Georgia State University, Atlanta, USA

– *Teaching Fellow*

- * CSC 1320 Principles of Computer Science II (Java Programming)
Worked as instructor for a class of 150 students

Spring 2022

– *Graduate Teaching Assistant*

- * CSC 4370 Web Programming [Instructor: [Louis Henry]]
- * CSC 3320 System-Level Programming [Instructor: [Michael Weeks]]
- * CSC 3210 Computer Org and Programming [Instructor: [Xucan Chen]]

Spring, Summer, Fall 2023

Fall 2022

Fall 2021

PROFESSIONAL EXPERIENCE

- Conference/Journal Reviewer (ACML, ISBRA)
- Interactive Communication (InComm) Atlanta USA
- Amerisave Mortgage Corporation Atlanta USA
- Tata Consultancy Services India
- Pentacle Softwares Ltd Jabalpur India

Aug 2023

Oct 2019 - Aug 2021

June 2016 - Oct 2019

Jan 2012 - June 2014

June 2011 - Jan 2012

COURSES

- Advance Machine Learning
- Advance Deep Learning
- Data Mining
- Computational Epidemiology
- Sensor Web Arch and Protocols
- Bio-Statistics

TECHNICAL SKILLS

- **DATA TOOLS:** D3.JS, Google Charts, MATLAB, R-Programming
- **PROGRAMMING SKILLS:** C#.NET, ASP.Net, Java, C, C++, Android, Python, Lucee, ColdFusion, Spring, Node.js
- **TOOLS AND IDE:** Microsoft visual studio, Eclipse, NetBeans, STS, Android Studio, Django, BIDS, STS
- **DATABASE:** BI, SSIS, SSRS, MS SQL Server 2012-14, Oracle PL/SQL
- **WEB TECHNOLOGY:** Bootstrap, HTML, CSS, Kendo UI, JavaScript, AJAX, JQuery. Reactive JS, React JS

HONOURS AND AWARDS

- Student Travel Award ([[IJCNN](#)], [[ICLR](#)]) (2023)
- Home Depot HACKATHON Winning team - 3rd Prize (Feb 2016)
- President Award for Boy Scouts - Eagle Scout (By - Dr. APJ Abdul Kalam, Former President of India) (2007)

References

- Dr. Murray Patterson mpatterson30@gsu.edu
- Dr. Gianluca Della Vedova gianluca.dellavedova@unimib.it