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**EDUCATION**

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**Indian Institute of Science***PhD in Computational and Data Sciences*

Bangalore, India

*Oct 2020 – 2025***National Institute of Technology***Bachelor of Technology (Hons) in Mechanical Engineering*

Raipur, India

*July 2016 – July 2020*

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**PROFESSIONAL APPOINTMENTS**

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**Intel Labs***AI Research Scientist*

Bangalore, India

*Jan 2025 – Present*

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**HONORS AND AWARDS**

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- **Winner:** National HPC Hackathon 2021. (Awarded AWS credits worth 10K USD)  
Organised by Intel India and AWS in association with Govt. of India.
- **Empower Program:** Awarded research funding from Kotak-IISc AI ML Center.

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**FELLOWSHIPS**

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- **Intel India Research Fellowship 2023-24**
- **RECOMB 2023 Travel Fellowship**

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**JOURNAL PUBLICATIONS**

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- **Genome Research 2025**  
Integer programming framework for pangenome-based genome inference.  
**Ghanshyam Chandra**, Md Helal Hossen, Stephan Scholz, Alexander T Dilthey, Daniel Gibney and Chirag Jain. *Genome Research*. doi.org/10.1101/2024.10.27.620212 (in press, RECOMB'25 extended version)
- **Genome Research 2024**  
Haplotype-aware Sequence Alignment to Pangenome Graphs.  
**Ghanshyam Chandra**, Daniel Gibney and Chirag Jain. *Genome Research*. doi.org/10.1101/gr.279143.124 (RECOMB'24 extended version)
- **AMB 2024**  
Co-linear Chaining on Pangenome Graphs.  
Jyotshna Rajput, **Ghanshyam Chandra** and Chirag Jain. *Algorithms for Molecular Biology*. doi.org/10.1186/s13015-024-00250-w (Invited paper, WABI'23 extended version)
- **JCB 2023**  
Gap-Sensitive Co-Linear Chaining Algorithms for Acyclic Pangenome Graphs.  
**Ghanshyam Chandra** and Chirag Jain. *Journal of Computational Biology*. doi.org/10.1089/cmb.2023.0186 (Invited paper, RECOMB'23 extended version)

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**REFEREED CONFERENCE PUBLICATIONS**

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- **RECOMB 2025**  
Integer programming framework for pangenome-based genome inference.  
**Ghanshyam Chandra**, Md Helal Hossen, Stephan Scholz, Alexander T Dilthey, Daniel Gibney and Chirag Jain. *International Conference on Research in Computational Molecular Biology*. (acceptance rate: 16%) doi.org/10.1101/2024.10.27.620212

- **RECOMB 2024**

Haplotype-aware Sequence-to-Graph Alignment.

**Ghanshyam Chandra**, Daniel Gibney and Chirag Jain. International Conference on Research in Computational Molecular Biology. (acceptance rate: 16%) doi.org/10.1101/2023.11.15.566493

- **WABI 2023**

Co-linear Chaining on Pangenome Graphs.

Jyotshna Rajput, **Ghanshyam Chandra** and Chirag Jain. 23rd International Workshop on Algorithms in Bioinformatics (WABI 2023). doi.org/10.4230/LIPIcs.WABI.2023.12

- **RECOMB 2023**

Sequence to Graph Alignment Using Gap-Sensitive Co-linear Chaining.

**Ghanshyam Chandra** and Chirag Jain. International Conference on Research in Computational Molecular Biology. (acceptance rate: 20%) doi.org/10.1007/978-3-031-29119-7\_4

## PREPRINTS

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- Accelerating whole-genome alignment in the age of complete genome assemblies.  
**Ghanshyam Chandra**, Md Vasimuddin, Sanchit Misra and Chirag Jain. (under review)  
doi.org/10.1101/2024.11.25.6253281

## TEACHING AND MENTORING

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- Teaching assistant for DS295: Parallel Programming (DS295) 2024

## TALKS

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- Integer Programming Framework for Pangenome-based Genome Inference.  
RECOMB 2025, Seoul, South Korea.
- Scalable Algorithms for Genome Inference and Pattern Matching on Pangenome Graphs.  
Parallel Computing Lab, Intel Labs Bangalore 2024, Bangalore, India.
- Haplotype-aware Sequence-to-Graph Alignment.  
RECOMB 2024, MIT, USA.
- Accelerating Whole-Genome Alignment using Parallel Chaining Algorithm.  
RECOMB-Seq 2024, MIT, USA.
- Scalable Algorithms for Genome-aware Sequence-to-Graph Alignment.  
EECS Symposium 2024, IISc Bangalore, India.
- Why Use Human Genome Graphs as a Reference? Insights into Scalable Genome Graph Algorithms.  
IEEE IISc CS&CIS/HKN Mu Xi Deep Tech Outreach Seminar Series 2024, Bangalore, India.
- Sequence to Graph Alignment using Gap-Sensitive Co-linear Chaining.  
RECOMB 2023, Istanbul, Turkey.
- A Scalable Algorithm for Sequence to Graph Alignment.  
EECS Symposium 2023, IISc Bangalore, India.

## POSTER PRESENTATION

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- Minichain: A New Method for Pangenome Graph Construction.  
**Ghanshyam Chandra** and Chirag Jain. RECOMB Satellite Conference on Biological Sequence Analysis.  
RECOMB-Seq 2023, Istanbul, Turkey.
- Scaling Sequence to DAG Alignment with Parameterized Gap-Sensitive Co-linear Chaining Algorithms.  
**Ghanshyam Chandra** and Chirag Jain. IEEE International Conference on High Performance Computing, Data, and Analytics. HiPC 2022, Bangalore, India.

## SKILLS

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- **Languages:** C, C++, Python, CUDA, JavaScript, HTML
- **ML Frameworks:** PyTorch, ScikitLearn
- **Parallel Computing Frameworks:** OpenMP, OpenACC, MPI
- **Optimization Frameworks:** Gurobi Optimizer

## SOFTWARE DEVELOPED

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- **Minichain:** Genome-aware long reads or phased contigs aligner to acyclic pangenome graphs.
- **PanAligner:** Long reads aligner to cyclic pangenome graphs.
- **mm2-plus:** Fast long-read and whole-genome aligner.
- **PHI:** Scalable tool for pangenome-based haplotype imputation.

## MEDIA COVERAGE

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- New algorithms advance genomic equity and personalised medicine.  
Covered by: *Times of India*, *Indian Institute of Science* [\[Link\]](#)

## ACADEMIC SERVICE

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- **PC member & Reviewer:** AccMLBio (ICML 2024)