

EDUCATION

- **Duke University** Durham, NC
PhD in Computational Biology and Bioinformatics *Aug 2018 - Present*
 - Third year PhD student in the Dave Lab studying the cells of origin in lymphoma subtypes
- **CentraleSupélec** Paris, France
Échange Académique Ingénieur (Semester Exchange Program) *Aug 2016 - Jan 2017*
- **Indian Institute of Technology Bombay** Mumbai, India
Bachelor and Master of Technology in Mechanical Engineering *Jul 2013 - Jul 2018*
 - Minor in Biosciences and Bioengineering
 - Thesis: A Study on the Application of Multi-Agent Systems for Managing Reverse Supply Chain Networks

PUBLICATIONS

1. Bakovic S*, **Thakkar D***, DeBenedittis P, Thomas MC, Iversen ES and Karra R. (2020) *Clonal Analysis of the Neonatal Mouse Heart using Nearest Neighbor Modeling*. Journal of Visualized Experiments DOI: 10.3791/61656
2. Shingleton JR, Wang J, Baloh C, Dave T, Davis N, Happ L, Jadi O, Kositsky R, Li X, Love CL, Panea RI, Qin Q, Reddy A, Singhi N, Smith E, **Thakkar D**, and Dave SS. (2020) *Non-Hodgkin Lymphomas: Malignancies Arising from Mature B Cells*. Leukemia and Lymphoma: Molecular & Therapeutic Insights, Cold Spring Harbor Perspectives in Medicine DOI: 10.1101/cshperspect.a034843
3. Panea RI, Love CL, Shingleton JR, Reddy A, Bailey JA, Moormann AM, Otieno JA, Ong'echa JM, Oduor CI, Schroeder KMS, Masalu N, Chao NJ, Agajanian M, Major MB, Fedoriw Y, Richards KL, Rymkiewicz G, Miles RR, Alobeid B, Bhagat G, Flowers CR, Ondrejka SL, Hsi ED, Choi WWL, Au-Yeung RKH, Hartmann W, Lenz G, Meyerson H, Lin YY, Zhuang Y, Luftig MA, Waldrop A, Dave T, **Thakkar D**, Sahay H, Li G, Palus BC, Seshadri V, Kim SY, Gascoyne RD, Levy S, Mukhopadhyay M, Dunson DB, Dave SS. (2019) *The Whole Genome Landscape of Burkitt Lymphoma Subtypes*. Blood DOI: 10.1182/blood.2019001880
4. **Thakkar D**, and Saini S. (2018) *Estimating Optimal Lysogenic Propensity for Viruses in Stressed Environments*. BiorXiv DOI: 10.1101/321372

RESEARCH

- **Ascertaining the Cell of Origin in Cancers** *Sep 2019 - Present*
Advisor: Sandeep Dave
 - Understand the genetics of hematopoietic malignancies by examining expression profiles of normal/malignant cells
 - Elucidate the connection between lineage and genetic alterations in lymphomas
- **Clonal Analysis of Cardiomyocyte Growth and Regeneration** *May 2019 - Aug 2019*
Advisors: Ed Iversen and Ravi Karra
 - Created a statistical model to identify the distribution of proliferating cardiomyocyte cells in injured hearts
 - Worked on understanding the relationship between cardiomyocyte proliferation and the vasculature of the heart
- **Computational Reconstruction of Immunoglobulin Sequences in Cancers** *Jan 2019 - Apr 2019*
Advisor: Sandeep Dave
 - Reviewed and compared existing tools for clonotype detection from Whole Genome Sequencing (WGS) data
 - Developed pipelines for identification of tumor clonotype from WGS data of 101 Burkitt Lymphoma samples

- **Understanding Non-coding Transcripts in Yeast**

Advisor: Alex Hartemink

Sep 2019 - Dec 2019

- Worked on understanding how the expression of non coding transcripts depends on adjacent protein coding genes
- Used MNase-Seq data to understand the impact of heavy metal stress on non-coding transcripts in yeast

- **Modeling the Optimal Propensity of Lysogeny for Co-existing Populations**

Advisor: Supreet Saini

Jun 2017 - May 2018

- Developed a model for estimating the probability of viral lysogeny that maximizes coexistence as a function of Multiplicity of Infection under different environmental stresses for bacterial growth
- Performed Gillespie simulations to discretize the reactions and search a 2-D space for the optimal coexistence curve

- **Selecting Features from Sample Specific Coexpression Networks**

Advisor: Chloé-Agathe Azencott

Dec 2016 - Mar 2017

- Studied existing weight transfer algorithms for the construction of sample-specific networks that incorporate gene expression data with a protein-protein interaction network
- Identified the relevant features using permutation importance in random forests from gene expression data

INVITED POSTERS AND TALKS

1. **Thakkar D** (2020) *Best Places to Almost Die - Understanding Emergency Response in New York City*. Data Through Design, NYC Open Data Week, New York, Feb 2020
2. **Thakkar D** and Dave SS. (2019) *Computational Reconstruction of Human Immunoglobulin Sequences*. Duke Computational Biology and Bioinformatics Retreat, Wilmington, NC, Sep 2019

SERVICE

- **Graduate & Professional Student Committee** 2020
Program Delegate
- **Gordon G. Hammes Faculty Teaching Award Committee** 2020
Committee Chair

INDUSTRY EXPERIENCE

- **TransUnion** Mumbai, India
Data Architect Intern Aug 2018 - Present
 - Developed pipelines for automated credit report creation on a 550M+ dataset with 50% reduction in execution time
 - Led the team for the migration of the analysis pipelines from SAS to the open-source Hadoop ecosystem using Pig
 - Performed regression analyses using Apache Spark to identify leading parameters affecting the rate of insolvency

TEACHING EXPERIENCE

1. **Project Management, Graduate Teaching Assistant** 2018
Indian Institute of Technology Bombay Mumbai, India
2. **Industrial Engineering & Operations Research, Graduate Teaching Assistant** 2017
Indian Institute of Technology Bombay Mumbai, India

PROGRAMMING SKILLS

- **Languages:** Python, R, Java, Processing