# MD Rahmoon Shamdeed Kabir

Colorado Springs, CO | (719) 654-6970 | s_kabir@coloradocollege.edu
linkedin.com/in/rahmoonshamdeed | github.com/shamdeed30

## Education

**Colorado College** (expected graduation: May 2025) ***GPA 4.00/4.00***
Bachelor of Arts, Computer Science; *Dean's List*, *Phi Beta Kappa*

**AIT Budapest** (Fall 2023) ***GPA 5.00/5.00***
Semester Abroad Program in Computer Science

## Research Experience

**Student Researcher** **August 2024 - *Present***
*Artificial Intelligence Research Laboratory, HUN-REN Sztaki, Budapest, Hungary*

- Researching epigenetic aging and CpG association under Dr. Csaba Kerepesi.
- Developed rDNA-based epigenetic clock model in humans to integrate with rat rDNA clock since rDNA is evolutionarily conserved across species.
- Utilized Bismark tool to extract methylation level of CpG sites from the RRBS-seq data in 182 samples.
- Investigating the causal CpG sites for aging using EWAS summary statistics data.
- Implemented complex data imputation techniques for missing data in CpG site methylation exploring ALS and kNN that improved the lab's intersection clock's performance by ~12%.

**Research Assistant** ***June 2024 - August 2024***
*Department of Molecular Biology, Colorado College*

- Assistant to Dr. Sara J. Hanson's lab, responsible for analyzing gene sequences for centromere research.
- Analyzed G/C percentages, ~3kb inverted repeat flanks, and intergenic regions in yeast genome.
- Developed a computational model to map centromere location in *Komagataella phaffi* using chromosome-level genome sequence.
- Developed a pipeline to identify centromere candidates in species having scaffold-level genome sequences.

**Data Research Assistant** (part-time) ***June 2023 - December 2023***
*State of the Rockies Project, Colorado Springs, CO*

- Analyzed quadrant data samplings for the Waldo Canyon Project under Dr. Cyndy Hine's supervision.
- Identified and mapped sampling quadrants in the north and south slopes using ArcGIS tool.
- Modeled regeneration patterns of Ponderosa Pines in the Waldo Canyon wildfire burn area.
- Published reports in State of the Rockies' yearly periodical, Anthropogenic.

## Professional/Relevant Experience

**Programming Analyst Intern** ***June 2023 - August 2023***
*Lexidyne LLC, Colorado Springs, CO*

- Developed a random-forest classifier model to predict lung cancer risk using ~80,000 client-provided patient data with ~82% accuracy rate.
- Developed a cancer forecast model that projects future trends in diagnosis rate, disease stage, and demographic distribution up to 2050 using population data and SEERStat Cancer Dataset.
- Set up a MySQL server for seamless storage and integration of databases to existing simulations in Java.
- Engaged in client meetings with Abbvie and Skyrizi under direct supervision.

**Technology Portfolio Manager** ***February 2023 - Present***

*Colorado College Investment Club, Colorado College*

- Manage ~ $36,000 portfolio by performing stock transactions and reporting to the club advisor.
- Lead bi-weekly meetings with members for stock pitches to collectively invest and/or divest from stocks.
- Prepared end-of-year reports analyzing portfolio performance, strategies, and member engagement.
- Coordinate with the communication manager to organize alumni panels on investing, careers, and industries.

**Venture Grant Recipient** ***Fall 2022***

*Office of the Dean, Colorado College*

- Received $3,000 to collect research data for Dr. Charlotte Gabrielsen at the Environmental Studies dept.
- Traveled to Costa Rica to collect water temperature, salinity, and pH data from the mangroves on the Pacific and Atlantic coasts.

**New Student Orientation Leader**, *Colorado College Outdoor Education* ***Fall of 2022, 2023, 2024***
**Circulation Shift Supervisor**, *Tutt Library at Colorado College* ***August 2022 - Present***
**Communications Intern,** *Colorado College Communications Dept* ***September 2021 - May 2022***

## Skills

**Programming Languages:** Python, R, Java, SQL, C, C++, JavaScript, D3, HTML/CSS.

**Technical Skills:** Git, Bash, SciPy, TensorFlow, PyTorch, Scikit-learn, NLTK, Pandas, Numpy, Matplotlib, Seaborn, Bismark, Seurat, ArchR, ClusterMap, BLAST, Parasail, NetworkX, Selenium, Stata, Excel, ArcGIS.

## Projects

**Differentially Expressed Genes in scRNA-seq in High Glucose Treated Zebrafish Embryos** *View Project*
**Price Factor Analysis of Airbnb Listings Using Random Forests** *View Project*
**Ribosomal RNA and Tree of Life Analysis** *View Project*
**Ant Colony Optimization in Travelling Salesman Problem** *View Project*
**Soccer Betting Platform (FottyBettor)** *View Project*
**Library Management System** *View Project*

## Relevant Coursework

Computational Biology and Medicine
Natural Language Processing
Data Science
Structure and Dynamics of Complex Networks
Scientific Computing
Data Visualization and Interpretation
Theory of Computation
Data Structures and Algorithms
Computer Organization
Software Design
Computer Science I & II
Computational Thinking
Linear Algebra
Probability and Statistics
Calculus II
Number Theory

## Awards/Activities

**Phi Beta Kappa Honors Society,** *Beta of Colorado* ***May 2024***
**Co-Chair,** *Colorado College South Asian Students Association* ***August 2023 - Present***
**Event Organizer,** *Colorado College Coding Club* ***August 2022 - Present***
**National Finalist,** *International Biology Olympiad (IBO)* ***April 2021***
**Multiple Gold Medalist,** *Bangladesh Biology Olympiad (BdBO)* ***March 2020 / March 2021***
**Silver Medalist,** *Bangladesh Robotics Olympiad (BDRO)* ***July 2021***