Raktim Mondol

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SUMMARY & RESEARCH INTEREST

I am an experienced data scientist and programmer, with deep expertise in artificial intelligence, bioinformatics, computer vision, and high-performance computing. My research background is centered on analyzing large datasets, developing new models, and performing advanced statistical analyses. I am a dedicated and committed individual with a strong team-oriented spirit, a positive attitude, and exceptional interpersonal skills.

EDUCATION

PhD, Computer Science & Engineering 2021 - 2025
UNSW, Sydney, Australia
Research Topic: *Deep Learning For Breast Cancer Prognosis & Explainability*
◇ **Thesis Submitted**

Masters by Research, Computer Sciecnce & Bioinformatics 2017 - 2019
RMIT University, Melbourne, Australia
High Distinction (85%)
Research Thesis: *Deep learning in classifying cancer subtypes, extracting relevant genes and identifying novel mutations*

WORK EXPERIENCE

Casual Academic July 2021 - Continuing
Dept. of Computer Science & Engineering
UNSW
Sydney, NSW
Duties/Responsibilities:

- ◇ Conduct Laboratory and Consultation Classes: Computer Vision, Neural Networks and Deep Learning, Artificial Intelligence

Teaching Assistant (Casual) July 2017 - Oct 2019
Dept. of Electrical and Biomedical Engineering
RMIT University
Melbourne, VIC
Duties/Responsibilities:

- ◇ Conducted Laboratory Classes: Electronics (EEET2255), Software Engineering Design (EEET2250), Engineering Computing I (EEET2246), Introduction to Embedded Systems (EEET2256).

Lecturer (Full-Time) September 2013 - December 2016
Dept. of Electrical and Electronic Engineering
World University of Bangladesh (WUB)
Dhaka, Bangladesh
Duties/Responsibilities:

- ◇ Courses Instructed (Theory): Electrical Circuit I, Electrical Circuit II, Engineering Materials, Electronics I, Electronics II, Digital Logic Design and Digital Electronics
- ◇ Courses Instructed (Laboratory): Microprocessor & Interfacing, Digital Electronics and Digital Signal Processing
- ◇ Supervised Students for Projects and Thesis

RESEARCH EXPERIENCE

Doctoral Researcher (Sydney, NSW, Australia) March 2021 – Jan 2025
Biomedical Image Computing Research Group
◇ Developed AI models to assist pathologists in breast cancer identification and treatment recommendation.

Master's Researcher (Melbourne, VIC, Australia) March 2017 – April 2019
NeuroSyd Research Laboratory
◇ Worked on developing a deep learning model and bio-informatics pipeline to extract bio-marker from high-throughput biological data.

TECHNICAL SKILLS

Languages: Python, R, SQL, LaTeX
Software: MATLAB, STATA, SPSS
Deep Learning Framework: Tensorflow, Pytorch
Distributed & Cloud Computing: AWS, GCP, GALAXY
Operating Systems: Windows, Linux
IDE: Spyder, Jupyter Notebook, VS Code, Rstudio

HONORS & RECOGNITION

2021 Awarded PhD Scholarship (Tuition Fee and Stipend)
2019 Completed Masters by Research with High Distinction
2017 RMIT Research Stipend Scholarship
2017 RMIT Research International Tuition Fee Scholarship
2013 B.Sc. in Electrical and Electronic Engineering with High Distinction
2013 Vice Chancellor Award Spring 2013, BRAC University
2010 Dean Award Fall 2010, Fall 2011, BRAC University

PARTICIPATED EVENTS

2019 Received Training on NGS RNA Seq.& DNA Seq. Data Analysis organized by ArrayGen
2017 Presented Poster in AMSI BioinfoSummer at Monash University
2017 Presented Thesis in 3 Minute Thesis (3MT) competition at RMIT University
2017 Received Training on High Performance Computing (HPC) at Monash University
2017 Symposium on Big Data in Infectious Diseases at University of Melbourne
2016 Received Training on Research Methodology at World University
2013 Presented Undergraduate Thesis in a Workshop Organized by IEEE Bangladesh

JOURNAL PAPERS

R. K. Mondol, E. K. A. Millar, P. H. Graham, L. Browne, A. Sowmya, and E. Meijering, "GRAPHITE: Graph-Based Interpretable Tissue Examination for Enhanced Explainability in Breast Cancer Histopathology," (Submitted, Under Review), 2024.

R. K. Mondol, E. K. A. Millar, and A. Sowmya, and E. Meijering, "BioFusionNet: Deep Learning-Based Survival Risk Stratification in ER+ Breast Cancer Through Multifeature and Multimodal Data Fusion," in *IEEE Journal of Biomedical and Health Informatics*, 2024.

R. K. Mondol, E. K. A. Millar, P. H. Graham, L. Browne, A. Sowmya, and E. Meijering, "hist2RNA: An Efficient Deep Learning Architecture to Predict Gene Expression from Breast Cancer Histopathology Images," in *Cancers*, 2023.

R. K. Mondol, N. D. Truong, M. Reza, S. Ippolito, E. Ebrahimie, and O. Kavehei, "AFExNet: An Adversarial Autoencoder for Differentiating Breast Cancer Sub-types and Extracting Biologically Relevant Genes," in *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2021.

CONFERENCE PROCEEDINGS

- R. K. Mondol, E. K. A. Millar, A. Sowmya, and E. Meijering, "MM-Survnet: Deep Learning-Based Survival Risk Stratification in Breast Cancer Through Multimodal Data Fusion," in *2024 IEEE International Symposium on Biomedical Imaging (ISBI),* Athens, Greece, 2024, pp. 1-5.

- M.I. Khan, R. K. Mondol, M.A. Zamee, and T.A. Tarique, "Hardware architecture design of anemia detecting regression model based on FPGA," in *International Conference on Informatics, Electronics Vision (ICIEV),* May 2014, pp. 1-5.

- Imran Khan, and R. K. Mondol, "FPGA based leaf chlorophyll estimating regression model," in *International Conference on Software, Knowledge, Information Management and Applications (SKIMA),* December 2014, pp. 1-6.

- R. K. Mondol, Imran Khan, Md. A.K. Mahbubul Hye, and Asif Hassan, "Hardware architecture design of face recognition system based on FPGA," in *International Conference on Innovations in Information Embedded and Communication Systems (ICIIECS),* March 2015, pp. 1-5.

- A. Hassan, R. K. Mondol, and M. R. Hasan, "Computer network design of a company — A simplistic way," in *2015 International Conference on Advanced Computing and Communication Systems (ICACCS),* Coimbatore, India, March 2015, pp. 1-4.

REFERENCES Upon Request