YOGESH KALAKOTI

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I am a Ph.D. student at the Indian Institute of Technology. My research aims at developing ML-assisted methods for processing, curating and analysing biological big data for modeling cancer phenotype and identifying potential lead molecules.

EDUCATION

Year	Degree	Institute	GPA
--	Ph.D. in Computational Biology	Indian Institute of Technology, Delhi	8.11
2014	B.Tech. in Biotechnology	GB Pant University of Ag. & Tech., Uttarakhand	7.27

RESEARCH OUTCOMES/PROJECTS

TransDTI: Transfomer-based language models for estimating DTIs and building a drug-recommendation workflow. ACS Omega 7(3): 2706-2717. *Jul 2020 -Jan 2021*
A multiclass classification and regression workflow employing transformer-based language models to segregate interactions between drug-target pairs, validated by molecular dynamics.
DOI: https://doi.org/10.1021/acsomega.1c05203
DOI: https://doi.org/10.1021/acsomega.2c00424

SurvCNN: a discrete time-to-event cancer survival estimation framework using image representations of omics data. Cancers 13: 3106. *Feb 2020 – Jun 2020*
Successfully demonstrated that numerical multi-omics data, transformed into latent representations, could identify genetic clusters coregulated in a diseased individual.
DOI: https://doi.org/10.3390/cancers13133106

Deep learning assisted multi-omics integration for survival and drug response prediction in breast cancer. BMC Genomics 22(1): 214. *Dec 2019 - Feb 2020*
Framework aimed towards estimating apatient's survival as well as response to common cancer drugs.
DOI: https://doi.org/10.1186/s12864-021-07524-2

Multi-omics integration-based predictive model for survival prediction of lung adenocarcinoma. IEEE Xplore 9071831. *Aug 2019 - Dec 2019*
An end-to-end framework that could estimate survival in LUAD patients, enabling earlier detection of mortality risk and personalized therapy.
DOI: https://doi.org/10.1109/GHCI47972.2019.9071831

SCHOLASTIC ACHIEVEMENTS

- Secured **AIR 53** in Graduate Aptitude Test in Engineering (GATE), 2018 (**99.67** percentile).
- Secured **AIR 12** in Combined Entrance Examination for Biotechnology (CEEB), 2018.
- Qualified the **JEE Mains** and **JEE advance** examinations, 2014.
- Recommended for the **National Defence Acadamy (NDA)** from SSB-22, Prayagraj, **2014**.

EXPERIENCE

Teaching Assistant (TA) *Jan 2019 – Sep 2020*
Indian Institute of Technology Delhi, New Delhi, India, 110016
Courses: Bioinformatics, Genomics and Proteomics, Master's project
Role: Assisted Prof in smooth conduct of classes, labs, assignments, and exams over the semester.

Webmaster *Aug 2014 – Jun 2018*
GB Pant University of Agriculture & Technology, Uttarakhand
Role: Overhauled the college website according to GOI recommendations for responsive websites.
Additional responsibility: Mentored incoming graduate students (2 from every incoming batch) in managing and maintaining the website.

CONFERENCES/WORKSHOP

1. Poster presentation 1st TCGA workshop on **multi-omics studies in cancer**, 2020, *IISER Pune, Maharashtra, India*.
2. Participated in the **GATK NGS data analysis workshop**, 2020, *Gujarat Biotechnology research centre, Gujarat and Brian Research Centre, Gujarat, India.*
3. Participated in the **Artificial Intelligence in Scientific Research**, 27th-30th January 2020, *IISER Bhopal.*
4. Oral presentation at **Genome India workshop**, 2021, *Indian institute of Technology, Madras.*
5. Attended the 2nd TCGA workshop on **multi-omics studies in cancer**, 2021, *Virtual.*
6. Poster presentation on transformer-based language models at **1st Research Innovation and Incubation showcase (RIISE),** IIT Delhi, New Delhi, 2022.

TECHNICAL SKILLS & EXPERTISE

Programming languages	**Frameworks**	**Workflows**
Python, MATLAB, R, C++	TensorFlow, PyTorch, OpenCV, Scikit-Learn	Schrodinger Suites, PyMol, VMD, Chimera, 3D-Slicer
Project Management	**Experimentation**	
Git	Cell culture, Basic microscopy, HPLC, DNA extraction	

Expertise:
Experienced in most ML architectures and frameworks such as CNNs, reccurent nets, transformers, among others. Additionally, I have experience in CADD such as virtual ligand screening, ligand-based drug design, molecular dynamics and homology modelling.

EXTRACURRICULAR

Data analytics, corporate relations *Jan 2019 – Sep 2020*
Indian Institute of Technology Delhi, New Delhi, India, 110016
Role: To provide inputs on the management of annual **Industry day 2019** at IIT Delhi. Identified and collaborated with experts form industry, academia and statups to mentor the participants.

Convener, Brillaire *Feb 2018 - Mar 2018*
GB Pant University of Agriculture & Technology, Uttarakhand
Role: Generated ~Rs.40k in sponsorship for my group from businesses. Successfully organised the annual cultural fest of the university under the capacity of executive body. included management of student welfare funds, orgnaing annual events and other cultural programmes.

CERTIFICATES & CREDENTIALS

Verified Python developer	**Machine learning**
Certifying body: LinkedIn Skill Assessment	*Certifying agency:* LinkedIn Skill Assessment
Python programming	**Problem-solving**
Certifying body: Hacker Rank	*Certifying body:* Hacker Rank
Credential ID: 324e13d80264	*Credential ID:* 3a3c61db5442

REFERENCES

Prof. D. Sundar, *Head & Institute chair professor*
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