

Yunan Luo

CONTACT INFORMATION	CODA S1245 756 W Peachtree St NW Atlanta, GA, 30308	<i>Webpage:</i> https://faculty.cc.gatech.edu/~yunan/ <i>E-mail:</i> yunan@gatech.edu
PROFESSIONAL EXPERIENCE	Georgia Institute of Technology , GA, USA School of Computational Science and Engineering Assistant Professor	2022 - Present
EDUCATION	University of Illinois Urbana-Champaign , IL, USA Department of Computer Science <ul style="list-style-type: none">• Ph.D. in Computer Science• Advisor: Professor Jian Peng Tsinghua University , Beijing, China Institute for Interdisciplinary Information Sciences <ul style="list-style-type: none">• B.Eng. in Computer Science• Member of Yao Class (Special Pilot CS Program)	2016 - 2021 2012 - 2016
SELECTED HONORS AND AWARDS	<ul style="list-style-type: none">• Baidu Scholarship (awarded to 10 AI students worldwide)• Yunni and Maxine Pao Memorial Fellowship• C.L. and Jane Liu Award (for junior Ph.D. showing exceptional research promise)• Winner of the IDG-DREAM Drug-Kinase Binding Prediction Challenge• CompGen Fellowship (×2)• GLBIO Travel Fellowship• RECOMB Travel Fellowship (×4)• PSB Travel Fellowship• Computer Science Excellence Fellowship• Best Undergraduate Thesis Award• Top Open Fellowship• Member of Tsinghua Xuetao Talents Program	2019-2021 UIUC, 2020 UIUC, 2019 2019 UIUC, 2018-2020 ISCB, 2019 ISCB, 2016-2019 ISCB, 2018 UIUC, 2016-2017 Tsinghua University, 2016 Tsinghua University, 2015 Tsinghua University, 2012-2016
PUBLICATIONS (*= <i>equal contribution</i>)	Google Scholar: https://scholar.google.com/citations?user=N8RBFoAAAAAJ&hl=en [1] Yunan Luo* , Guangde Jiang*, Tianhao Yu, Yang Liu, Lam Vo, Hantian Ding, Yufeng Su, Wesley Wei Qian, Huimin Zhao, Jian Peng. “ECNet is an evolutionary context-integrated deep learning framework for protein engineering.” <i>Nature Communications</i> , 2021. (Extended version of the RECOMB’20 paper) [2] Xianggen Liu, Yunan Luo , Sen Song, Jian Peng. “Deep geometric representations for modeling effects of mutations on protein-protein binding affinity.” <i>PLOS Computational Biology</i> , 2021. [3] Jianzhu Ma, Samson Fong, Yunan Luo , Christopher Bakkenist, John-Paul Shen, Soufiane Mourragui, Lodewyk Wessels, Marc Hafner, Roded Sharan, Jian Peng, Trey Ideker. “Few-shot learning creates predictive models of drug response that translate from high-throughput screens to individual patients.” <i>Nature Cancer</i> , 2021 [4] Yiyue Ge, Tingzhong Tian, Suling Huang, Fangping Wan, Jingxin Li, Shuya Li, Xiaoting Wang, Hui Yang, Lixiang Hong, Nian Wu, Enming Yuan, Yunan Luo , Lili Cheng, Chengliang Hu, Yipin Lei, Hantao Shu, Xiaolong Feng, Ziyuan Jiang, Yunfu Wu, Ying Chi, Xiling Guo, Lunbiao Cui, Liang Xiao, Zeng Li, Chunhao Yang, Zehong Miao, Ligong Chen, Haitao Li,	

- Hainian Zeng, Dan Zhao, Fengcai Zhu, Xiaokun Shen, and Jianyang Zeng
 “An integrative drug repositioning framework discovered a potential therapeutic agent targeting COVID-19.”
Signal Transduction and Targeted Therapy, 2021
- [5] Anna Cichonska, et al. (including **Yunan Luo** in the challenge-winning team)
 “Crowdsourced mapping extends the target space of kinase inhibitors”
Nature Communications, 2021
- [6] **Yunan Luo**, Lam Vo, Hantian Ding, Yufeng Su, Yang Liu, Wesley Wei Qian, Huimin Zhao, Jian Peng.
 “Evolutionary context-integrated deep sequence modeling for protein engineering.”
International Conference on Research in Computational Molecular Biology (RECOMB), 2020.
- [7] **Yunan Luo**, Kaiyu Guan, Jian Peng, Sibow Wang, Yizhi Huang.
 “STAIR 2.0: a generic and automatic algorithm to fuse MODIS, Landsat, and Sentinel-2 to generate 10m, daily, and cloud-/gap-free surface reflectance product.”
Remote Sensing, 2020
- [8] **Yunan Luo**, Jian Peng and Jianzhu Ma.
 “When causal inference meets deep learning.”
Nature Machine Intelligence (News & Views), 2020.
- [9] Hyungsuk kimm, Kaiyu Guan, Chongya Jiang, Bin Peng, Laura F Gentry, Scott C Wilkin, Sibow Wang, Yaping Cai, Carl J Bernacchi, Jian Peng, **Yunan Luo**.
 “Deriving high-spatiotemporal-resolution leaf area index for agroecosystems in the U.S. Corn Belt using Planet Labs CubeSat and STAIR fusion data.”
Remote Sensing of Environment, 2020.
- [10] **Yunan Luo**^{*}, Jianzhu Ma^{*}, Xiaoming Zhao, Yufeng Su, Yang Liu, Trey Ideker and Jian Peng.
 “Mitigating Data Scarcity in Protein Binding Prediction Using Meta-Learning.”
International Conference on Research in Computational Molecular Biology (RECOMB), 2019.
- [11] Yufeng Su^{*}, **Yunan Luo**^{*}, Xiaoming Zhao, Yang Liu, Jian Peng.
 “Integrating thermodynamic and sequence contexts improves protein-RNA binding prediction.”
PLOS Computational Biology, (also presented at *GLBIO*), 2019.
- [12] **Yunan Luo**, Kaiyu Guan, Jian Peng.
 “A generic and fully-automated method to fuse multiple sources of optical satellite data to generate a high-resolution, daily and cloud-/gap-free surface reflectance product.”
Remote Sensing of Environment, 2018.
- [13] **Yunan Luo**^{*}, Yun William Yu^{*}, Jianyang Zeng, Bonnie Berger, Jian Peng.
 “Metagenomic binning through low density hashing.”
Bioinformatics, 2018.
- [14] **Yunan Luo**^{*}, Jianzhu Ma^{*}, Yang Liu, Qing Ye, Trey Ideker and Jian Peng.
 “Deciphering Signaling Specificity with Deep Neural Networks.”
International Conference on Research in Computational Molecular Biology (RECOMB), 2018.
- [15] **Yunan Luo**, Sheng Wang, Jinfeng Xiao and Jian Peng.
 “Large-Scale Integration of Heterogeneous Pharmacogenomic Data for Identifying Drug Mechanism of Action.”
Pacific Symposium on Biocomputing (PSB), 2018.
- [16] **Yunan Luo**^{*}, Xinbin Zhao^{*}, Jingtian Zhou^{*}, Jinglin Yang, Yanqing Zhang, Wenhua Kuang, Jian Peng, Ligong Chen and Jianyang Zeng.
 “A Network Integration Approach for Drug-Target Interaction Prediction and Computational Drug Repositioning from Heterogeneous Information.”
Nature Communications, 2017. (Extended version of the RECOMB’17 paper)
- [17] **Yunan Luo**^{*}, Xinbin Zhao^{*}, Jingtian Zhou^{*}, Jinglin Yang, Yanqing Zhang, Wenhua Kuang, Jian Peng, Ligong Chen and Jianyang Zeng.
 “A Network Integration Approach for Drug-Target Interaction Prediction and Computational

Drug Repositioning from Heterogeneous Information.”
International Conference on Research in Computational Molecular Biology (RECOMB), 2017.

- [18] **Yunan Luo**, Jianyang Zeng, Bonnie Berger, Jian Peng.
“Low-Density Locality-Sensitive Hashing Boosts Metagenomic Binning.”
International Conference on Research in Computational Molecular Biology (RECOMB), 2016.

PREPRINTS AND
WORKING PAPERS

- [19] Palash Sashittal*, **Yunan Luo***, Jian Peng, Mohammed El-Kebir.
“Characterization of SARS-CoV-2 viral diversity within and across hosts.”
bioRxiv (bioRxiv:2020.05.07.083410), 2020.
- [20] **Yunan Luo**, Jian Peng, Mohammed El-Kebir.
“Phylogenetic inference of clone-specific expression and mutation profiles from matched RNA and DNA tumor samples.”
Manuscript, 2019.
- [21] Yang Liu, **Yunan Luo**, Yuanyi Zhong, Xi Chen, Qiang Liu, Jian Peng.
“Sequence Modeling of Temporal Credit Assignment for Episodic Reinforcement Learning.”
arXiv (arXiv:1905.13420), 2019.
- [22] Wesley Wei Qian, Nathan Russell, Claire Simons, **Yunan Luo**, Martin Burke and Jian Peng.
“Integrating Deep Neural Networks and Symbolic Inference for Organic Reactivity Prediction.”
ChemRxiv (ChemRxiv:11659563), 2019.
- [23] Ke Xu, Kaiyu Guan, Jian Peng, **Yunan Luo**, Sibow Wang.
“DeepMask: an algorithm for cloud and cloud shadow detection in optical satellite remote sensing images using deep residual network.”
arXiv (arXiv:1911.03607), 2019.

TEACHING

- CSE8803/CX4803 Machine Learning for Computational Biology, GaTech, Spring 2022

SERVICES

- Reviewer: RECOMB 2018, 2021, 2022; ISMB 2019, 2020; ACM-BCB 2019; WABI 2021; Cell Systems; Bioinformatics; PLOS Computational Biology; Genomics, Proteomics & Bioinformatics; IEEE/ACM Transactions on Computational Biology and Bioinformatics; Remote Sensing of Environment

ACADEMIC TALKS

- RECOMB 2020 Virtual Conference, 06/2020
- Baidu AI Future Forum Beijing, China, 01/2020
- UIUC Computational Biology Seminar Series Champaign, IL, USA, 09/2019
- Great Lakes Bioinformatics Conference (GLBIO) Madison, WI, USA, 05/2019
- RECOMB 2019 Washington DC, USA, 05/2019
- Data Science Day, Illinois Data Science Initiative Champaign, IL, USA, 09/2018
- RECOMB 2018 Paris, France, 04/2018
- Pacific Symposium on Biocomputing (PSB) Big Island of Hawaii, USA, 01/2018
- Blue Waters Symposium Sunriver, OR, USA, 05/2017
- RECOMB 2017 Hong Kong, China, 05/2017
- RECOMB 2016 Los Angeles, CA, USA, 05/2016