QIAN DU

djyjin@gmail.com 402-484-1047 | Boston, MA
github.com/purod linkedin.com/in/ds-QianDu

EXPERIENCE

Senior Research Scientist (Precision Medicine)

GNS Healthcare, Inc – Boston, MA July 2021 – Present

- Collaborated with Abbvie on longitudinal data from phase III clinical trial to study the efficacy of two Adalimumab dosing regimens among patients with ulcerative colitis disease, resulting in two causal networks that be used to explore predictors and underlying molecular mechanisms driving responders vs. non-responders
- Serving as the analyst advisory for Amyotrophic Lateral Sclerosis (ALS) Disease project, guiding the team to preprocess omics data and to construct predictive and causal models for a better understanding of the biological relevancy
- Working with internal team to develop study protocols, reports, presentations, and publications for clients and collaborators

Research Scientist (Precision Medicine)

GNS Healthcare, Inc – Boston, MA Jun 2020 – July 2021

- Identified novel predictors of the disease progression in metastatic castration-resistant prostate cancer(mCRPC) patients from the real-world data using Bayesian causal analysis
- Led and built a series of causal networks for multiple cancer types (prostate cancer, breast cancer, and colorectal cancer) that were successfully integrated into the IPA and QCI platforms of Qiagen

Research Assistant

University of Nebraska-Lincoln – Lincoln, NE Aug 2014 – Dec 2019

- Technical lead in several oncology projects: applied ensemble methods such as random forest and gradient-boosted algorithms on CT-imaging data and microarray data to evaluate the impact of radiomics features on disease prediction, stratify patient population by risk, and discover novel biomarkers and targets
- Bioinformatic and statistical analyses of high-throughput RNAseq data to develop a clustering-based feature selection pipeline that can be implemented for the identification of gene sets responding to environmental stress
- Developed a computational framework for whole-genome genotyping of short tandem repeats in rice population through building accession-specific genomes
- Collaborated with multiple research teams and published 24 papers (6 first-author, 18 co-author papers, and 1 book chapter)
- Supervised an interim group to build a database of root-associated genes using HTML, MySQL, and PHP in three months

EDUCATION

Ph.D. Bioinformatics, University of Nebraska-Lincoln 2019
M.S. Statistics, University of Nebraska-Lincoln 2016
B.S. Biology, Shandong University 2012

AFFILIATIONS & MEMBERSHIPS

BioMedInformatics. Guest Editor Sep 2021-Present
Journal of Personalized Medicine. Topical Advisory Panel Member May 2021-Present

SKILLS

- Machine Learning (6 years)
- Statistics (6 years)
- Bioinformatics (7 years)
- Deep Learning (2 years)
- Molecular Biology (10+ years)
- Oncology (4 years)
- Microsoft Word (10+ years)
- Microsoft PowerPoint (10+ years)
- R (7 years)
- Python (4 years)
- Perl (4 years)
- Linux (7 years)
- SAS (Certified Advanced Programmer)
- MySQL (1 year)
- AWS (1 year)
- Git (2 years)
- TCGA (2 years)
- Next generation sequencing (7 years)

PUBLICATIONS

1. M Campbell, **Qian Du**, K Liu, B Berger, C Zhang, H Walia. A comprehensive image-based phenomics analysis reveals the complex genetic architecture of shoot growth dynamics in rice (Oryza sativa). *The Plant Genome* (2017)
2. K Liu, **Qian Du**, G Ren, B Yu, C Zhang. Identification of differential alternative splicing events with an adjusted beta-distribution model. *IEEE Computer Society* (2017)
3. **Qian Du**, C Zhang, X Zhu, X Liang, C Zhang, V Verma, K Follet, S Wang, Q Fan, R Ma, S Zhou, D Zheng. Application of statistical and computational methodology to predict brainstem dosimetry for trigeminal neuralgia stereotactic radiosurgery. *Medical Physics* (2018)

4. L Virlouvet, T Avenson, **Qian Du**, C Zhang, N Liu, M Fromm, Z Avramova, S Russo. Dehydration stress memory: Gene networks linked to physiological responses during repeated stresses of Zea mays. *Frontier in Plant Science* (2018)
5. H Lin, **Qian Du**, Q Li, O Wang, Z Wang, K Liu, E Christian, C Zhang, Y Lei. Hydrogel-based bioprocess for scalable manufacturing of human pluripotent stem cells-derived neural stem cells. *ACS Applied Materials & Interfaces* (2018)
6. H Lin, **Qian Du**, Q Li, O Wang, Z Wang, K Liu, C Zhang, C Soonkyu; B Duan, Y Lei. Differentiating Human Pluripotent Stem Cells into Vascular Smooth Muscle Cells in Three Dimensional Thermoreversible Hydrogels. *Biomaterials science* (2018)
7. H Lin, **Qian Du**, Q Li, O Wang, Z Wang, K Liu, C Zhang, Y Lei. Manufacturing Human Pluripotent Stem Cells Derived Endothelial Cells in Scalable and Cell-friendly Microenvironments. *Biomaterials Science* (2018)
8. H Lin, **Qian Du**, Q Li, O Wang, Z Wang, N Sahu, C Elowsky, K Liu, C Zhang, S Chung, B Duan, Y Lei. A Scalable and Efficient Bioprocess for Manufacturing Human Pluripotent Stem Cell-Derived Endothelial Cells. *Stem Cell Reports.* (2018)
9. **Qian Du**, M Baine, K Bavitz, J McAllister, X Liang, H Yu, J Ryckman, L Yu, H Jiang, S Zhou, C Zhang, D Zheng. Radiomic feature stability across 4D respiratory phases and its impact on lung tumor prognosis prediction. *PLOS ONE*. (2019)
10. **Qian Du**, M Campbell, H Yu, K Liu, H Walia, Q Zhang, C Zhang. Network-based feature selection reveals substructures of gene modules responding to salt stress in rice. *Plant Direct* (2019)
11. M Campbell, **Qian Du**, K Liu, S Sharma, C Zhang, H Walia. Characterization of the transcriptional divergence between the subspecies of cultivated rice (Oryza sativa). *BMC genomics* (2020)
12. E Parr, **Qian Du**, C Zhang, C Lin, A Kamal, J McAlister, X Liang, K Bavitz, G Rux, M Hollingsworth, M Baine, D Zheng. Radiomics-Based Outcome Prediction for Pancreatic Cancer Following Stereotactic Body Radiotherapy. *Cancers* (2020)
13. Y Shi, E Wahle, **Q Du**, L Krajewski, X Liang, S Zhou, C Zhang, M Baine. Associations between Statin/Omega3 Usage and MRI-Based Radiomics Signatures in Prostate Cancer. *Diagnostics* (2021)
14. M Baine, J Burr, **Qian Du**, C Zhang, X Liang, L Krajewski, L Zima, G Rux, D Zheng. The Potential Use of Radiomics with Pre-Radiation Therapy MR Imaging in Predicting Risk of Pseudoprogression in Glioblastoma Patients. *Journal of Imaging* (2021)
15. H Yu, **Qian Du**, M Campbell, B Yu, H Walia, and C Zhang, "Genome-Wide Discovery of Natural Variation in Pre-mRNA Splicing and Prioritizing Causal Alternative Splicing to Salt Stress Response in Rice. *New Phytologist* (2021)