QIAN DU

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

EXPERIENCE

Research Scientist (Precision Medicine)

GNS Healthcare, Inc – Boston, MA Jun 2020 - Present

- Collaborating with clients from top biopharma on a variety of cancer projects including discovering new causal biological relationships, identifying potential drivers of disease progression, and predicting patient outcomes to treatment.
- Integrating demographics, clinical, and genomic data and performing predictive and causal modeling to understand biological relevancy
- Working with internal team to develop study protocols, reports, presentations, and publications for clients and collaborators

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

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)