

Kian Faizi

kian@caltech.edu | kianfaizi.com | github.com/kfaizi

EDUCATION

California Institute of Technology <i>Ph.D. in Systems Biology</i>	Sep. 2021 – present <i>Pasadena, CA</i>
University of California, San Diego <i>B.S. in Molecular Biology, Minor in Mathematics (GPA: 3.75)</i> <ul style="list-style-type: none">Selected coursework: Bioinformatics, Biophysics, Computational Linear Algebra, Dynamical Systems, Gene Regulation, Gene Editing, Statistics, Stochastic Processes	Aug. 2017 – June 2021 <i>La Jolla, CA</i>
International School of Kuala Lumpur <i>I.B. Diploma, Earth Club President, Varsity Basketball Team Captain</i>	Aug. 2013 – June 2017 <i>Kuala Lumpur, Malaysia</i>

EXPERIENCE

Rotation Student <i>Lab of Rob Phillips, Caltech</i> <ul style="list-style-type: none">Studying microbial genome regulation with MPRA and statistical mechanics	Sep. 2021 – Dec. 2021 <i>Pasadena, CA</i>
Lab Technician <i>Lab of Wolfgang Busch, Salk Institute for Biological Studies</i> <ul style="list-style-type: none">Investigated cost-performance trade-offs in the <i>Arabidopsis</i> root system using high-throughput phenotyping and graph-theoretic modelingCreated a Python GUI for segmenting time-series images of root growthHelped develop an algorithm for plant phenotyping from noisy LiDAR scansBuilt a pipeline for co-expression network analysis of scRNA-seq data to identify genetic targets for future crop engineering	Nov. 2019 – Sep. 2021 <i>La Jolla, CA</i>
Volunteer Research Assistant <i>Lab of Patrick Hsu, Salk Institute for Biological Studies</i> <ul style="list-style-type: none">Developed an automated pipeline to mine metagenomes for new orthologs of CRISPR-Cas13d, and searched over 20TB of sequence dataAssisted in performing a pooled 150,000-guide Cas13d screen in K562s to optimize gRNA design	Nov. 2018 – Nov. 2019 <i>La Jolla, CA</i>

PUBLICATIONS

Deep learning of Cas13 guide activity from high-throughput gene essentiality screening. <ul style="list-style-type: none">Jingyi Wei, Peter Lotfy, Kian Faizi, Hugo Kitano, Patrick D. Hsu, and Silvana Konermann. <i>In press</i>. doi:10.1101/2021.09.14.460134
Branch-Pipe: Improving graph skeletonization around branch points in 3D point clouds. <ul style="list-style-type: none">Illia Ziamtsov, Kian Faizi, and Saket Navlakha. <i>To appear in Remote Sensing</i>.
Network design principles in the <i>Arabidopsis</i> root system. <ul style="list-style-type: none">Kian Faizi, Matthieu Platre, Arjun Chandrasekhar, Saket Navlakha, and Wolfgang Busch. <i>In prep</i>.

TEACHING

Undergraduate Instructional Apprentice UCSD <ul style="list-style-type: none">For <i>Genetic Inquiry</i>, supervised by Stanley Lo	Aug. 2020 – Dec. 2020
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POSTERS AND PRESENTATIONS

Co-expression analysis of single-cell RNA-seq data Talk <ul style="list-style-type: none">HDSI Research Conference	Oct. 2020
Mining Genomes for RNA-Targeting CRISPR Effectors Talk <ul style="list-style-type: none">UCSD Summer Research Conference	Aug. 2019
Metagenomic Discovery of Type VI-D CRISPR Effectors Poster <ul style="list-style-type: none">UCSD Biology Student Research Showcase	June 2019

HONORS AND AWARDS

Halicioglu Data Science Institute Scholarship Project Award <i>UCSD</i>	May 2021
DOE CSGF Honorable Mention <i>Krell Institute</i>	Apr. 2021
Halicioglu Data Science Institute Scholarship \$2,500 <i>UCSD</i> <ul style="list-style-type: none">Project: <i>Single-cell transcriptomics and web mining for rapid reverse genetics in plants</i>, proposed under Wolfgang Busch	Dec. 2019
Eureka! Research Scholarship for Biological Sciences \$5,000 <i>UCSD</i> <ul style="list-style-type: none">Project: <i>Discovery and development of Type VI-D CRISPR effectors for transcriptome engineering applications</i>, proposed under Patrick Hsu	June 2019
Provost Honors <i>UCSD</i>	quarterly

PROFESSIONAL ACTIVITIES

Undergraduate Bioinformatics Club Member <i>UCSD</i>	Nov. 2017 – June 2021
<ul style="list-style-type: none">Collaborated with Illumina to develop digital resources for high school students interested in bioinformaticsHelped organize the 2018 Faculty & Industry Bioinformatics SymposiumVolunteered at the SD Science & Engineering Festival to teach the community about DNA sequencing technology	

SKILLS

Laboratory: Cell/tissue culture, molecular cloning, CRISPR screens, optical microscopy

Computational: Image analysis, biologically-inspired algorithms, point clouds, GUI development

Languages: Python, bash, HTML/CSS/JS

Organizational: Git, L^AT_EX, Linux/Unix systems

Libraries: NetworkX, matplotlib, seaborn, numpy, pandas, BLAST+