

# Yangruirui ZHOU

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Tel: (+1) 857-763-9402

Boston, MA

## EDUCATION

### Boston University, Boston, MA

09/2020-Now

Ph.D. student, Department of Engineering

GPA: 3.91/4.00

- Research focus on microfluidic CAD tools and algorithms in synthetic biology applications.

### University of Electronic Science and Technology of China (UESTC), Chengdu, China

09/2016-06/2020

B.E, Department of Software Engineering (*Elite program*)

GPA: 3.94/4.00 (Rank: 6/740)

- Senior Thesis: Analysis of Postoperative Applications of Pose Tracking Algorithms.

## RESEARCH

### Boston University, Boston, MA

07/2020-Now

#### Research Assistant, CIDAR lab

Supervisor: Prof. Douglas Densmore

- *Implement programmable auto-design platform for microfluidic device.*
- *Implement graph partitioning algorithm with size and communication constraints.* 11/2022-Now
- *Implement validation algorithm for continuous-flow microfluidic devices with constraints.* 03-09/2022
- *Design microfluidic device with Multiple experiment modes for a project aiming to research the strategy in cell-cell communication.* 07/2020-03/2022

### MIT, Boston, MA

11/2022-Now

#### Collaborative Research Assistant, Voigt lab

Supervisor: Prof. Christopher Voigt

- *Work for the gene circuit partitioning part of a cryptographic hash algorithm implemented by cells rather than electronic components.*

## PROJECTS

### University of California, Santa Barbara, CA

06-08/2019

#### Student Research Internship, Four eye's lab

Supervisor: Prof. Matthew Turk and Prof. Tobies Hollerer

- *Pose tracking algorithm organization, implementation, and optimization.*

## AWARDS & HONORS

**Most Outstanding Students of UESTC 2019** (成电杰出学生, 10/5000 in UESTC, 1/740 in department)

12/2019

iGEM "Gold medal" and "Best Software Project"

11/2019

Outstanding Graduates Award of UESTC

10/2019

"Wu Liang Ye" Enterprise Scholarship (2/740 in Software Engineering department)

09/2019

## PROFESSIONAL SERVICES

ICCAD'22 Second Paper Reviewer

06/2022

Teaching Assistant of EC504 (Advanced data structure and algorithms)

01-05/2022, 01-05/2023

Student Mentor of iGEM team: BostonU

04-10/2024

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## PUBLICATIONS

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- [1, IWBDA'22] A Conceptual Interactive Microfluidic Design and Control Workflow 07-08/2022
- [2, IEEE-TCAD] Zhou, Y., Oliveira, S. M., Sanka, R., McIntyre, D., & Densmore, D. (2024). Vespa: Logic-Level Constraint-Based Validation for Continuous-Flow Microfluidic Devices. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*. (doi: 10.1109/TCAD.2024.3435706) 09/2021-02/2024
- [3, Nature Chemical Biology] Padmakumar, J. P., Sun, J. J., Cho, W., Zhou, Y., Krenz, C., Han, W. Z., ... & Voigt, C. A. (2024). Partitioning of a 2-bit hash function across 66 communicating cells. *Nature Chemical Biology*, 1-12. (doi: 10.1038/s41589-024-01730-1) 04/2022-12/2023
- [4, IEEE-TCBB] [under review] Constraint-based Sub-graph Partitioning for Multi-cellular Biological Networks 02/2023-08/2024

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## ACTIVITIES

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- [1] International Workshop on Bio-Design Automation (IWBDA'22) 10/2022
- [2] Engineering Biology Research Consortium (EBRC'23) 06/2023
- [3] Chicago BioEngineering Conference (CBEC'24) 09/2024