Käferholzstrasse 48, 8057-Zürich □ (+41) 762876311 | ■ankit@ethz.ch | ♠ www.ankitjain.ch | ₲ 27ankitjain

MICROFILIIDIC ENGINEER · ELECTRICAL ENGINEER

Education _____

ETH Zurich

DR. SC. (INSTITUTE OF CHEMICAL AND BIOENGINEERING)

- Worked on High-throughput droplet sorting for enzyme evolution with Prof. Andrew deMello.
 - Developed droplet-based microfluidic platforms that ingeniously combine fluid mechanics with electrical and optical components to
 establish novel techniques for detection and sorting. These platforms enable 100x faster screening of large enzyme libraries compared
 to the state-of-the-art plate screening systems.
 - In collaboration with the biochemists, **developed novel assays for enzyme engineering in microfluidics** using fluorescence- and absorbance-activated droplet sorting. These assays allow screening of actual substrates of interest, obviating the need of surrogates.

MSc in Micro- and Nanosystems - 5.55/6 GPA

- Developed a microfluidic chip with on-chip valves for on-demand digital barcoding on microfluidic droplets as part of my master's thesis.
- Implemented an image-based automated microfluidic platform for large scale screening of C. elegans.

IIIT Allahabad

BTECH IN ELECTRONICS AND COMMUNICATION ENGINEERING - 9.35/10 GPA

Work Experience _

ETH Zurich, Institute of Chemical and Bioengineering

Research Assistant

- Conceptualized, designed and tested novel microfluidic and optofluidic systems for a variety of applications such as enzyme engineering, immune-cell screening and in-vitro diagnostics.
- · Automated the experimental workflow with real-time data-analysis to bring down experiment time from hours to minutes.
- Trained several students on droplet microfluidic techniques: device fabrication using 3D printing and microfabrication, cell-phenotyping, microfluidic sorting and gene-recovery from droplets.

Juniper Networks

HARDWARE ENGINEER

- Conceptualized, designed, brought up, and tested high-speed PCBs, owning the development process from concept to pre-production.
- Designed and verified control logic of the FPGA for high-speed boards, and collaborated with the PCB layout, Mechanical, Software, Testing and Manufacturing teams to bring the product to completion.

Skills _____

- Microfluidics Droplet sorting, Continuous-flow, On-chip valves and electrodes, Impedance detection, Flow cytometry, Cell sorting Optics Fluorescence, Absorption and Photothermal detection, Spectroscopy, Laser-optics
 - Devices CAD Designs (Autocad, Solidworks), Photolithography, 3D-Printing, PDMS, PMMA, Paper, Surface functionalization
- Elec. Systems System architecture, Board design, FPGA development, Microcontrollers, Firmware

Biology Cell culture and preparation, assay development

Programming MATLAB, LabVIEW, Python, COMSOL Multiphysics

Languages English, German (B1), Hindi

Selected Publications _

Programmable Control of Multiscale Droplets using V-Valves

T. XUE*, A. JAIN* (EQUAL CONTRIBUTION), X. CAO, D. HESS, S. STAVRAKIS, A. J. DEMELLO; Advanced Material Technologies 2022, 2201553

Development of a Universal NADH Detection Assay for High Throughput Enzyme Evolution Using FADS

G. KOLAITIS*, A. JAIN* (EQUAL CONTRIBUTION), D. ROMEIS, T. BURYSKA, M. STEIGER, L. WUERSTLI, M. DOERING, B. BEER, S. STAVRAKIS, A. J. DEMELLO, V. SIEBER; ChemRxiv 2022 Target Journal: ACS Catalysis

Zurich, Switzerland

Jan, 2018 - Feb, 2023

Sept, 2015 - Dec, 2017

Allahabad, India

Aug, 2009 - Jul, 2013

Zurich, Switzerland Jan, 2018 - PRESENT

Bangalore, India

Jan, 2013 - Aug, 2015