

# Shyam Jesalpura



Nov 2022

PRESENT

*PhD student under supervision of Prof. Boris Grot, UNIVERSITY OF EDINBURGH*

- Developing systems for large scale data analytics using serverless workers, spanning query planning, cost modeling, and query execution.
- Other Projects:
  - **Zipline:** Optimized data-intensive serverless workflows by developing methods to accelerate data transfers and reduce ephemeral storage costs.
  - Engineered systems that combine serverless functions and microservices to enhance load resilience and efficiently utilize diverse compute resources ([link](#)).

## WORK EXPERIENCE

AUG 2021

OCT 2022

*Software Engineer at MICROSOFT IDC, Hyderabad*

- Improved Microsoft Defender for iOS using various security heuristics.

JAN 2021

AUG 2021

*Research Intern at EASE LAB, The University of Edinburgh*

- Helping researchers optimize cold start delays in serverless functions.
- Contributing to **vhive** (Open Source Framework for Serverless Experimentation).

AUGUST 2020

DEC 2020

*Professional Services Intern at AMAZON PROFESSIONAL SERVICES, New Delhi*

- Developed an automated proctoring system using eye-gaze tracking on AWS.

SUMMER 2020

*Summer Intern at MICROSOFT IDC, Hyderabad*

- Enabled Microsoft Defender ATP to scan, quarantine and report the threats inside Linux Docker containers.
- Learned the inner workings of linux containers via linux namespaces, proc filesystem and union filesystems.

SUMMER 2019

*Research Intern at INDIAN INSTITUTE OF MANAGEMENT, Bangalore*

- Automated the digitisation using of 1931 Census data from scanned PDF images using open CV, python-multiprocess.
- Developed a phonetic algorithm to compare and group similar sounding caste names using NLP.

SUMMER 2017

*Summer Intern at NATIONAL INNOVATION FOUNDATION, India*

- Redesigning a temporary shelter for the Salt Farmers of Kutch which kept the house 5°C cooler. Applied the concepts of Human centered designing and Design thinking

## EDUCATION

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AUG 16 - JULY 21    **MSc. in Economics & B.E. in Computer Science**  
from BITS Pilani, Hyderabad campus  
CGPA: 8.71/10 or 3.48/4

## PROJECTS

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AUG 19	Spotlight search for Linux <i>Apple's spotlight like search engine for linux</i>
OCT 19	<ul style="list-style-type: none"><li>• Search inside the document like pdfs, Docx</li><li>• Ranked search results in near real time using vector space model</li><li>• Real time file monitoring for database updation using inotifywait</li><li>• Advanced wildcard query support</li></ul>
FEB 19	Student Mess Registration Portal
MAR 19	<i>Portal has been deployed and currently registers 8000+ college students/sec</i> <ul style="list-style-type: none"><li>• Increased registration capacity 20 fold to 8000+ requests/sec with 0 % error rate by designing a robust mechanism to handle critical race conditions</li><li>• Designed CAPTCHA for the users to prevent people from scripting using go-lang + in-memory DB.</li></ul>
MAY 18	Nand2Tetris - 1
AUG 18	<i>Building computer from first principles</i> <ul style="list-style-type: none"><li>• Built a programmable CPU in 6 stages starting from NAND gates as a part of nand2tetris course.</li><li>• Stages included building:<ul style="list-style-type: none"><li>- An Assembler program that translates programs written in the symbolic Hack assembly language into binary code</li><li>- An ALU by combining logic gates, Flip-flops, and registers</li><li>- Memory devices like RAM and ROM using Mux/Dmux and registers</li><li>- Combining ALU, and memory to build CPU capable of running binary code loaded into memory</li></ul></li></ul>

## POSITIONS OF RESPONSIBILITY

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AUG 19 - JULY 20	Member of Student Faculty Council for <b>Department of Computer Science</b>
AUG 19 - JULY 20	<b>Ex officio Student Welfare Division</b>
AUG 18 - JULY 19	<b>Technical Head for Student Welfare Division</b> <ul style="list-style-type: none"><li>• Performed Ubuntu linux server administration using nginx.</li><li>• Lead the team to develop<ul style="list-style-type: none"><li>- Complaints portal to add, remove, filter all student complaints using PHP and MySQL.</li><li>- Automated certificate generation process to remove human intervention completely</li></ul></li></ul>

## COMPETITIONS

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MARCH 2019	<b>Finalist</b> in Smart India Hackathon by <b>Government of India</b> <ul style="list-style-type: none"><li>Utilised IRNSS's Messaging Capabilities to direct people towards relief centers during disasters.</li><li>The proposed solutions included sending:<ul style="list-style-type: none"><li>10 relief locations with 100m accuracy, in 220 bits.</li><li>Alternative of 4 locations, while adding 2 current weather &amp; other critical information alongside</li></ul></li><li>Simulated the satellite-phone interface using MQTT. Publisher/Suscriber model helped us in directing the message to appropriate client.</li></ul>
JULY 2014	National Science Exhibition <ul style="list-style-type: none"><li>Developed operational model of energy generation from footsteps to charge gadgets on the move and provide air cushion.</li><li>Stood runners-up at the state level.</li></ul>

## SKILLS

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Programming Languages: Golang, C/C++, Python  
Technology: Databases, Cloud computing, FaaS

## INTERESTS AND ACTIVITIES

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Game Theory, Economics, Psychology  
Rock Climbing, Ultimate Frisbee, Hiking