

# Ravinithesh

DIGITAL HUMANITIES PH.D CANDIDATE · EPFL

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## Education

### École Polytechnique Fédérale de Lausanne (EPFL)

Lausanne, Switzerland

PH.D., DIGITAL HUMANITIES - EPFL PHD EXCELLENCE FELLOW

2022 - Present

- *Relevant Coursework:* Network Machine learning.
- *Thesis:* Frameworks for Data Assisted Participatory Decision Making.
- *Advisor:* Prof. Daniel Gatica-Perez
- *GPA:* 5.5/6

### EPFL

Lausanne, Switzerland

MASTER OF SCIENCE (M. SC), DIGITAL HUMANITIES

2020 - 2022

- *Relevant Coursework:* Foundation of Digital Humanities, Computational Social Media, History and the Digital, Applied Data Analysis, Deep Learning, Digital Education, Cultural Data Sculpting, Distributed Information Systems, Digital Musicology, Design Research.
- *Thesis:* Searching for visual patterns in a children's drawings collection
- *Advisor:* Prof. Frédéric Kaplan
- *GPA:* 5.64/6

### Mahindra École Centrale (MEC)

Hyderabad, India

BACHELOR OF TECHNOLOGY (B.TECH), COMPUTER SCIENCE AND ENGINEERING

2014 - 2018

- *Relevant Coursework:* Artificial Intelligence, Machine Learning, Data Mining, Database Management Systems, Web Programming, Design Thinking, Cinema & Philosophy, Modern Culture & Philosophy, Urban Studies.
- *Thesis:* Adaptive Learning in Extreme Learning Machines
- *Advisor:* Prof. Arya Kumar Bhattacharya
- *GPA:* 9.88/10 (last year); 9.21/10(overall).

## Experience

### Idiap Research Institute

Martigny, Switzerland

RESEARCH ASSISTANT, SOCIAL COMPUTING GROUP AND CENTER FOR PARTICIPATORY AI

Oct. 2022 - Present

- Working on designing and developing data-assisted participatory decision-making computational systems/tools for urban security missions, together with multiple European cities and NGOs, following a human-centered methodology as part of the *IcARUS* project, funded under the European Union H2020 program.

### École Polytechnique Fédérale de Lausanne

Lausanne, Switzerland

MASTER THESIS STUDENT, DIGITAL HUMANITIES LABORATORY

Mar. 2022 - Jul. 2022

- Developed a deep learning system to mine the children's drawings database of the Louis François center for UNESCO to find patterns linked with famous artworks.

### Institut national d'histoire de l'art

Paris, France

RESEARCH INTERN, SERVICE NUMÉRIQUE DE LA RECHERCHE (DIGITAL RESEARCH)

Sep. 2021 - Feb. 2022

- Part of the RICH.DATA team.
- Developed a *pipeline* for post-processing correction of OCRized historical documents using the data itself with minimal external data.
- Using the developed pipeline, cleaned and published dataset of People in 19<sup>th</sup> century Paris extracted from the city directories.

### Ground Inc.

Tokyo, Japan

DATA SCIENTIST, ALGORITHM AND PRODUCT DEVELOPMENT

Nov. 2018 - Sep 2020

- Part of the team that develops algorithms to model a warehouse for optimizing the cost involved in logistic operations.
- *GCODE*  
Developed a Python tool to create a data set of point clouds and performed object classification using them.
- *Automatic Buffer Inserter*  
Developed a Python program to suggest coordinates to a robot to place the buffer material in the delivery box to protect the items from damage.
- *Development of DyAS*  
Developed variants of Dynamic Inventory Allocation software - that suggest the best locations for stock expecting future orders and Dynamic Resource Allocation software - that combines and schedules orders in a warehouse to reduce lead fulfillment time.

### MEC

Hyderabad, India

RESEARCH ASSISTANT, PROF. ARYA KUMAR BHATTACHARYA

May. 2017 - Jul. 2017

- Developed a neural network based system that can predict adverse digressions in a noisy industrial process using Extreme Learning Machines.

## MEC & Tech Mahindra

RESEARCH ASSISTANT, PROF. ARYA KUMAR BHATTACHARYA

Hyderabad, India

Aug. 2015 - Feb. 2016

- Developed Machine Learning solutions to predict i) load on a transformer and ii) the expected number of Electric Vehicles using Artificial Neural Nets for the *Smart Grids of Ontario, Canada*.

## Publications

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### Adaptive Critic Design for Extreme Learning Machines applied to noisy and drifting industrial processes

RAVINITHESH A, A.K. BHATTACHARYA AND NIRANJAN REDDY M

*IEEE Symposium Series on Computational Intelligence*

2018

### Advance Predictions of critical digressions in a noisy industrial process - performance of Extreme Learning Machines versus Artificial Neural Networks

RAVINITHESH A, A.K. BHATTACHARYA AND G. RISHITA

*IFAC International Conference on ACODS*

2018

### Extreme Learning Machines with Frequency-based noise filtering for prediction of critical digressions in a noisy industrial process

ADITYA GUPTA, MANIKUMAR PLN, RAVINITHESH A, ARYA K. BHATTACHARYA

*IEEE India Council International Conference*

2017

### Magnetic Metamaterials: A comparative study of resonator geometry and metal conductivity

SHASHANK R, RAVINITHESH A, K SREEKAR, KAUSIK B, MURTAZA B AND DIBAKAR R C

*IUPAP Conference on Computational Physics*

2016

## Invited Talks

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### Artwork patterns in a children's drawings

At Institut Mondial d'Art de la Jeunesse - Centre pour l'UNESCO

Results of exploring a recently digitized children's drawings collection and using deep learning models for matching drawings with popular cultural objects.

*Troyes, France*

July, 2022

### Algorithms for Intelligent Logistics

INDIAN INSTITUTE OF TECHNOLOGY - HYDERABAD

Using Machine Learning for optimizing logistics operations and personal journey in Japan

*Hyderabad, India*

Sep, 2019

## Academic Projects

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### Empowering Communities in the Policy Process: Data-Assisted Cross Boundary Multi-Stakeholder Participatory Model

*PhD Work*

Spring 2023

A multi-stakeholder governance network model for preventing juvenile delinquency utilizing a Participatory Data Action framework to empower communities and bridge the gap between governance institutions and the citizens for more transparent, trusted, and effective urban governance.

### Enhancing Urban Neighborhood Policing Strategies through Data-Driven Adaptations

*PhD Work*

Fall 2022

Developed a resourceful approach that combines data-driven insights with citizen perceptions to optimize community police deployment for creating safer, inclusive communities leveraging technology, data, and community engagement for informed, responsive, and democratic governance.

### TikTok and the US election

*Computational Social Media*

Spring 2021

*Analyzing* the hashtags and challenges on TikTok related to the 2020 US Presidential election showed that youth are also concerned about issues but use non-traditional means of communication and dialogue.

### Hollywood and the Pentagon

*History and the Digital*

Spring 2021

*Analyzing* the Hollywood movies that received assistance from the US Department of Defense (DoD) using the language processing techniques revealed that the DoD help was biased towards those providing a good outlook.

### Tonality in non-western music

*Digital Musicology*

Spring 2021

*Research* on the cross-culturality of tonality in music by statistically analyzing modal music of Chinese Folk Songs revealed deep cross-regional similarities highlighting the directedness of music across all the examined regions.

## Face of the War

Cultural Data Sculpting

Spring 2021

*Interactive visualization* of the Great War soldiers. While presenting the portraits of soldiers along with their records, the visualization manifests the question, who is the real face of the war?

## Famous World

Data Visualization

Spring 2021

*Developed* a spatial visualization platform to display famous people from Pantheon based on their birthplace.

## Terzani Online Museum

Foundation of Digital Humanities

Fall 2020

Developed an *online platform* to access the photo collection of Mr. Terzani through text and image based search.

# Professional Training

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## EPFL PhD Excellence Program

Fellowship

EPFL

May 2024 - Present

- Started professional training in transversal, leadership, and communication skills. Provides an opportunity to learn about technology transfer, policy, and governance in Switzerland.

## Science and Policy – How to bridge the gap?

Summer School

EPFL - ETHZ

July 2023

- Took part in the summer school to understand aspects of the Swiss and international science-policy interface and effective engagement with policymakers through science communication.

## Technology Entrepreneurship Program

Research & Product development

INDIAN SCHOOL OF BUSINESS

May 2016 – May 2018

- Created a working prototype and business plan for a system that enables the dairy farmers to do business, without the need for middlemen.

# Skills

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## Programming

Python, C++, MATLAB, MySQL, Pybind, HTML/CSS, Latex

## Softwares and Services

Docker, Git, AWS GCP and Adobe Premiere Pro.

## Languages

English (Fluent), French (Elementary), Japanese (Elementary), Hindi (Fluent), Telugu(Mother Tongue).

# Research Mentoring

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## Shasha Jiang

MASTER THESIS (EPFL)

2022 - 2023

# Honors & Awards

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## Scholarship

MEC

Received merit scholarship for three consecutive years at Mahindra École Centrale.

2014 - 2017

# Co-Curricular Activities

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## Secretary, Digital Humanities Association (dharma)

EPFL

Collaborated with association members to organize debates, conferences, and events related to Digital Humanities

2023 - Present

## Class Delegate, Digital Humanities Section

EPFL

Represented the students of Digital Humanities department in various fronts and academic councils at EPFL.

2020 - 2022

## Head, Internship and Placement Council

MEC

Facilitated visits and interactions of students with industries for jobs and internships.

2017 - 2018

## Founder and Head, OutReach Club

MEC

Designed and led students in community outreach programs like VIGNAN, MyParliament, and blood donation drives.

2015 - 2018