



## EDUCATION

### BE | Computer Engineering

PVGCOET | 2016-2020

SPPU, Pune University

- CGPA: 8.79

## COURSEWORK

### Computation

Artificial Intelligence & Robotics 410242

Data Analytics 410243

Data Mining & Warehousing 410244(D)

Machine Learning 410250

Soft Computing 410252(D)

Information & Cyber Security 410251

Human Computer Interface 410253(B)

Web Technology 310256

Computer Networks 310245

Design & Analysis of Algorithms 310250

Info System & Engg Economics 310244

Software Engg & Project Mgmt 310243

Database Management Systems 310242

Advanced Data Structure 210252

Computer Graphics 210251

Data Structure & Algorithms 210243

Object Oriented Programming 210245

Computer Organization 210244

Fundamentals of Prog Languages 110003

### Psychology & Thinking

Introduction to Psychology

Brain & Space

Human Emotions

Design Thinking for Innovation

### Stat/Math

Complex Variables 207003

Vector Calculus 207003

Transforms 207003

Probability & Distribution 207003

Statistics 207003

Discrete Mathematics 210241

Graph Theory & Trees 210241

Relations & Functions 210241

Set Theory & Logic 210241

Differential Equations 107008

Fourier Series 107008

Integral Calculus & Applications 107008

Curve Tracing & Solid Geometry 107008

Matrices 107001

Differential Calculus 107001

Infinite Series 107001

Partial Differentiation 107001

## AREAS OF INTEREST

Cognitive Computing • NLP • Conversational Intelligence • ML • Information Retrieval

## RESEARCH PROJECTS

### Personalized newspaper based on emotional traits using machine learning

#### | BE project

Since May 2019 under supervision of Prof. M Marathe

- determining cultural and emotional traits of reader
- ranking and collation of news articles for desired impact
- literary inclination detection

### Impact on human behavior with exposure to different cultures and presenting it in association and closeness using graphical methods

#### | Cultural association using machine learning

Oct 2018 to Mar 2019 under supervision of Dr. Bradly Alicea

- multi-level graph association
- dynamic node mapping for graph association
- graph clustering to determine representative cultural traits

### Right task allocation and team selection

#### | Context vector convergence (CVC)

Apr 2018 to Jun 2018 under supervision of Prof. M Marathe

- behavioral context determination
- mission vector and scenario vector mapping
- iterative team member selection and ranking

### Multi-agent system for customer behavior tracking using shoppers' path or traversal

#### | Determining behavioural pattern of customer

Jan 2018 to Mar 2018 under supervision of Prof. P Patil and Prof. R Mennon

- association among traversal path of customers
- suggestion for personalized traversal path
- dynamic suggestion for rearrangement of articles

### Kansei Engineering – embedding emotions into products, news, and advertisements in order to respond emotions of customers

#### | Emotional traits and context determination of customers

Oct 2017 to Dec 2017 under supervision of Dr. P Chande and Dr. P Joshi

- context based features included in the product, news and advertisements
- association between products and emotions for recommendation
- context specific personalized emotions are suggested

### VicharDhara

#### | A thought mapper

Jun 2017 to Aug 2017 under supervision of Dr. N Rajopadhye

- ranking thought process of candidates
- early depression detection based on thought process
- classification of thought process using Intent Action Ontology

## ACCOLADES

- Best Paper Award at IEEE conference ICCUBEA 2017, Pune INDIA
- Best Paper Award at IEEE conference ICCUBEA 2019, Pune INDIA
- Best Outgoing Student 2020, Computer Engineering, PVGCOET, SPPU, Pune
- Only candidate selected by GCC for Google Summer of Code 2018
- Idea "VicharDhara" Selected in top five for Accenture Innovation Challenge - 2017 among 7000 entries across the country. Specially appreciated as one of the most innovative projects by juries.
- Finalist at Smart India Hackathon 2018 Chennai
- PVG Merit Award "First admission award" 2016 (out of 500 students)
- Only student representative for IQAC (Internal Quality Assurance Cell) PVGCOET 2018-2020
- Founded Open Source Club at PVGCOET Pune 2018
- Won second award (Runner-up) Cyber Genius Quiz
- Stood Sixth in High School Scholarship (out of 30000 students) 2011
- Cleared two Tabla examinations (2008, 2009) Bharat Gayan Samaj
- School Basketball team captain
- Completed many Swimathons

## FUNDING AWARDS

Received stipend for all four internships  
Travel award to present paper at ICACCI (2017)


Travel award for Smart India Hackathon (2018)

## SOCIAL ACTIVITIES

Volunteering work for Driving Safety  
Volunteering work at Ocean Savers  
Participated in social activities in rural areas of Maharashtra



## PATENT

### Published

- Based on the concept of Vichardhara, a provisional patent is filed in Aug 2017. Filed an Indian patent on July 2018 E-2/1489/2018/MUM and PCT in July 2018. PCT/IN2018/050502 

## PUBLICATIONS: PEER REVIEWED JOURNALS

### Published/Accepted

- Hrishikesh Kulkarni, Manisha Marathe, "Context Vector Convergence (CVC) of Computational Behavior and Cultural Traits for Team Selection", *Int. J. of Information and Decision Sciences (IJIDS)* (Accepted) (Scopus Indexed) 
- Hrishikesh Kulkarni, Prachi Joshi, PK Chande, "Computational Psychology to Embed Emotions into Advertisements to Develop Emotional Bonding", 2019, *Indian Journal of Psychological Science, NAPS*, (Accepted) 

### Under review

- Hrishikesh Kulkarni, Bradly Alicea, "Cultural Closeness Using Graphical Association to Determine Suitability for Task", *IETE National Journal of Innovation and Research (NJIR)*, ISSN 2320 - 8961

## PUBLICATIONS: PEER REVIEWED CONFERENCES

### Published

- Hrishikesh Kulkarni, "Contextual Data Representation Using Prime Number Route Mapping Method and Ontology" *IEEE Conference, ICCUBEA, June 2017* - **Received Best Paper Award** 
- Hrishikesh Kulkarni, "Intelligent Context Based Prediction using Probabilistic Intent-Action Ontology and Tone Matching Algorithm", *IEEE Conference, ICACCI, Manipal, Oct 2017* (Scopus Indexed) 
- Hrishikesh Kulkarni, "Intent Action Ontology and Tone Matching Algorithm for Organizing News Articles", *IEEE Conference, ICECDS, Chennai, July 2017* 
- Hrishikesh Kulkarni, "Thought Process based Team Member Selection Using Contextual Sentiment Closeness", *IEEE Conference (Bombay Chapter), International Conference on Convergence of Technology, I2CT Pune, April 2018* (Scopus Indexed) 
- Hrishikesh Kulkarni, "Multi-Graph based Intent Hierarchy Generation to Determine Action Sequence", *Springer Conference, ICDECT, December 2017, Pune* 
- Hrishikesh Kulkarni, Prachi Joshi, Pradip Chande, "Computational Psychology to Embed Emotions into News or Advertisements to Increase Reader Affinity", *5th International Psychological Congress, Chandigarh, INDIA, 2018* (NAPS) 
- Hrishikesh Kulkarni, Bradly Alicea, "Cultural Affinity through Associative Machine Learning and Behavioral Computation", *5th International Psychological Congress, Chandigarh, INDIA, 2018* (NAPS) 
- Hrishikesh Kulkarni, Prachi Joshi, Pradip Chande, "Computational Psychology to Embed Emotions into Product to Increase Customer Affinity", *Springer Conference ICICCT, Hyderabad, 2019* (Scopus Indexed) 
- Hrishikesh Kulkarni, P Patil, R Menon, "Multi-Agent System for Customer Behavior Tracking Using Shoppers' Path Traversal", *CS8009, Third IEEE International Conference ICECCT 2019* (Scopus Indexed) 
- Hrishikesh Kulkarni, Manisha Marathe, "Machine Learning Based Cultural Suitability Index (CSI) for Right Task Allocation" *CT1055, Third IEEE International Conference ICECCT 2019* (Scopus Indexed) 
- Hrishikesh Kulkarni, Bradly Alicea, "Cultural Association Based on Machine Learning for Team Formation.", *IEEE Conference, ICCUBEA, Sept 2019* - **Received Best Paper Award** 
- Hrishikesh Kulkarni, Tejas Joshi, Nikhil Sanap, Rohan Kalyanpur, Manisha Marathe, "Personalized Newspaper Based on Emotional Traits Using Machine Learning.", *IEEE Conference, ICCUBEA, Sept 2019* 

## MEMBERSHIPS

IEEE | student member  
since 2017

NAPS (National Association of  
Psychological Science) | life  
member  
since 2018

TMCP (Toastmasters Club of Pune)  
| member  
since 2017

PVG's OSC (PVGCOET's Open  
Source Club) | founder  
since 2018

BDB Book Club Pune | member  
since 2016

## SKILLS

C • C++ • Java  
Python • Eclipse • Django  
Vim • Linux based OS •  $\text{\LaTeX}$

## LANGUAGES

Full Proficiency  
English • Marathi • Hindi  
Limited Proficiency  
German • Sanskrit

## TALKS

A poet who writes his poems in  
Python  
TMCP 2017

Mathematics in Real Life  
TMCP 2017

Transportation Networks  
PVGCOET 2017

Parallel Database Systems  
PVGCOET 2018

GCC and GSOC  
PVG's Open Source Club 2018


Git and Github  
PVG's Open Source Club 2018

Sentiment Computing for News  
PVGCOET 2019

## BOOKS READ

Those Inspire My Work  
The Drunkard's Walk • Black Swan •  
Art of Choosing • Master Algorithm  
• Meta-Reasoning • Sapiens •  
Algorithms to Live By

## INTERNSHIPS

National Insurance Academy (NIA) Data Science Research Lab   
| Three month Research internship

Jun 2019 - Aug 2019 under supervision of Dr. SD Page 

- intent mining for farmer association
- agricultural insurance mapping
- optimal benefits for insuree
- value creation for people at Bottom of Pyramid

GNU Compiler Collection  `</>`

| Google Summer of Code (GSOC) internship

May 2018 to Aug 2018 under supervision of Martin Liška  and Jan Hubicka 

- the LTO object file is a regular elf file with sections containing LTO byte-code
- there are couple of limitations of the byte code format: 1] It is not self descriptive, which makes it harder to debug. 2] The byte code is essentially a “serialized” version of in-memory representations, which makes it prone to break across versions
- the purpose of this project was to create a dump tool for easily analyzing LTO object files similar to readelf or objdump -d for regular ELF object files

iKnowlation Research Labs Pvt. Ltd. 

| Six month Research internship

Jul 2017 to Dec 2017 under supervision of Dr. P Chande  and Dr. P Joshi 

- intent mining for team selection and depression detection
- multi-level key-word and key-phrase association
- keynode association map
- kansei engineering and embedding emotions into product

Hosting Duty subsidiary of Kaizen Infosys 

| Summer internship

May 2017 – Jul 2017 under supervision of Nenadd Chandorkar 

- web mining using TFIDF and other off the shelf algorithms
- data association and anomaly detection

## OTHER PROJECTS

Contextual recall for patients suffering from Alzheimer's disease

| Android application

Jun 2018 to Sep 2018 under supervision of Prof. A Bhadgale 

- android application for recall
- mapping activities to patients
- scenario based alerts

An artificial intelligence based optimal transfer solution using  
constraint vector resolution and suitability index

| Smart India Hackathon 2018

Apr 2018 under supervision of Prof. M Marathe 

- automated transfer of employees based on suitability
- ranking of employees with reference to jobs
- holistic approach with special considerations

Literary Inclination Detection

| In-Progress

Since Jun 2019 under supervision of Dr. Bradly Alicea 

- topic modelling and personal interest vectors to decide literary inclination
- based on initial findings a research paper communicated to ACL 2020