#### Asutosh Hota

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RESEARCH INTERESTS

Human-Computer-Interaction (HCI), Computational Interaction, Emergent User Interfaces and Machine Learning.

#### **EDUCATION**

#### Master's Programme in CCIS — Human-Computer Interaction

School of Science, Aalto University Espoo, Finland

Expected 2021

• Full Tuition fee waiver

#### Bachelor of Technology — Computer Science and Engineering

College of Engineering and Technology Bhubaneswar, India

June 2018

- $\bullet$  Top 10% of the class with a CGPA of 8.28
- Awarded CET Merit Scholarship

#### RESEARCH EXPERIENCE

#### Research Intern — Escorts Group

May 2017 to Present

### Computer Vision Assisted Autonomous Weeding for Cabbage

Supervisor: Mr. Nijagun Hiremath, DGM, Escorts Ltd

- Lead the development team to implement a computer vision assisted model to classify weed and cabbages using Tensorflow.
- Designed and developed a table-top model to simulate the autonomous weeding process.
- Seed funded 2000 USD from Escorts Group to facilitate research.

#### Research Assistant

July 2015 to Feb 2016

#### Shallow parser based Hindi to Odia Machine Translation System Supervisor: Prof. Jyotirmayee Routaray, Dept. of CSE, CET, Bhubaneswar

• Developed a robust Hindi to Odia machine translation system to facilitate easy understanding of the national language and related literature by the regional population using Apertium, open source platform.

#### Academic Collaboration — IIT Bhubaneswar

Dec 2016 to Dec 2017

#### Designing of a Sign Language Interface for Single Handed Communications Supervisor: Dr. Debi Prosad Dogra, School of Electrical Sciences, IIT, Bhubaneswar

- Worked under the supervision of Dr. D. P. Dogra and led the team to develop an efficient Sign Language Recognition and Training (SLRT) system to facilitate learning, training and testing of basic gestures of Indian Sign Language for the differently abled individuals.
- Granted 1000 USD under the guidelines Technical Education Quality Improvement Programme II (TEQIP), A Unit of MHRD, Govt of India for Implementation of World Bank Assisted Projects in Technical Education.
- The project envisaged the idea of developing a communication model for speech and hearing impaired individuals which constitute 2.76% of the Indian population. Furthermore, an interface was designed to facilitate learning, training and testing of the gestures under Indian Sign Language to the specially challenged individuals.

- A differential feature selection technique and hierarchical classification model was proposed by the work which gave optimum accuracies for the single handed communications.
- Comparison and performance analysis of different supervised classification algorithms like SVM, KNN, SGD etc and techniques to improve them was proposed.

#### Refereed Publications

- 1. A. Hota, R. Agarwal, S. S. Gochhayat, S. Mahapatra, "Performance Analysis of Supervised Classification Models on Gesture Recognition of Single Handed Alphabet System of Indian Sign Language", *International Journal of Management and Applied Science (IJMAS)*, 2017, pp. 92-97, Volume-4, Issue-3
- A. Hota, D. Pramanik, L. P. Lenka, R. Agarwal, S. S. Gochhayat, S. Mahapatra, and S. R. Choudhury "Gesture to Speech using Leap Motion Controller: Communication Model for Speech and Hearing Impaired.", International Conference on Computing for Sustainable Global Development (INDIACom), IEEE Conference ID: 40353 (2017) [Accepted].
- 3. J. Rautaray, A. Hota and S. S. Gochhayat, "A shallow parser based Hindi to Odia Machine Translation System", *International Conference on Computational Intelligence in Data Mining (ICCIDM)*, In: Springer Advances in Intelligent Systems and Computing (AISC) (2017) [Accepted]
- 4. A. Hota, S. S. Gochhayat, M. Nayak and M. Panda, "Cryptographic System assisted Secure Cloud Storage Systems.", *International Journal OF Advanced Research In Science, Engineering And Technology*, Vol. 4, Issue 12, December, 2017.

# SUBMITTED JOURNAL PUBLICATIONS

1. A. Hota, R. Agarwal, S. S. Gochhayat, S. Mahapatra, and D. P. Dogra, "Designing of a Sign Language Interface for Single Handed Communications", ACM Transactions on Computer-Human Interaction [Under Review]

#### Manuscripts in Preparation

- 1. P. K. Patra, A. Hota, S. S. Gochhayat, R. Agarwal, S. Mahapatra, "Computer Vision Assisted Automated Weeding System for Agro-machineries"
- 2. S. S. Gochhayat, **A. Hota** and J. Routaray "A Review of Precision Based Weeding Technologies in Agriculture"

#### AWARDS

#### IEEE Bhubaneswar Subsection Student's Colloquium

Dec 2016

- $\bullet\,$  Best paper award among 32 papers from participants from colleges all over the state.
- Selected for Collaboration with IIT, Bhubaneswar.

#### ISTE Silicon Institute of Technology Chapter

2016

• Best paper award among 40 papers from participants from colleges all over the state.

#### CODE N COUNTER 2.0 by NAGARRO

Aug 2011

• Runners-up among 80 teams all over India and received a cash prize of 1000 USD

#### CSI Discover Thinking Online Programming Contest

2016

• Placed among top 60 programmers in the National Level Hackathon

#### Work Experience

#### Winterfell Web Services — Co-founder

Apr 2016

- Incubated under the Technical Society of the College of Engineering and Technology, Bhubaneswar, to provide web services to startups and corporate firms in the state.
- Generated a revenue of 4000 USD in 14 months.

#### University Service

#### Technical Secretary, Student's Forum, CET, Bhubaneswar Aug 2017 - Present

- Assist with planning of technical events, competitions and conferences in the college and organize Perception, Annual Techno-Management fest of the college.
- Review the applications for funding of technical endeavors by students.
- Improve industrial collaborations with the technical clubs of the college.

#### Counselling Service — Zairza Technical Society

Jun 2015 - Present

- Conducted Introductory classes for freshmen/sophomore year students on python, computer vision and basic algebra.
- Organized sessions to promote emerging practices and technologies in computer science.

#### COMMUNITY SERVICE

#### Lead Volunteer — NSS, CET, Bhubaneswar

Aug 2015 - Present

- Assisted the college's flood relief team and disaster management squad under the National Service Scheme during Cyclone Hudhud which affected coastal regions of Odisha.
- Organized blood donation camps and several awareness programs in underprivileged areas of Bhubaneswar.

#### Volunteer — Google Developer Group, Bhubaneswar Sep 2015 - Present

- Organized several workshops in the field of web-development, UI/UX design and basics of machine learning for the students of different colleges in the state.
- Represented the organization as a speaker to present projects and innovations undertaken by the community members.

#### Projects

#### PREGAINFO — Intelligent Recommendation regarding Pregnancy

- A web-based personalized recommendation system for pregnant women to guide them through routines of continuous check-ups and proper diet suggestions.
- Customised reminders and recommendation from the date of pregnancy

#### CLEAN-CLAN — Gamification app for Clean India Campaign

- Designed the UI/UX of the web based social awareness application.
- Presented at Technovanza Hackathon, VJTI, Mumbai and awarded with a special mention for innovation.

## SKILLS AND COMMUNICATION

#### **Technical Skills**

- Programming Languages: C++, Python3, JavaScript
- Work Tools and Frameworks: Tensorflow, Scikit-Learn, LATEX, Excel, Git

#### Communication Skills

- Proficient in English, Hindi and Odia (Native).
- $\bullet$  Full Working Proficieny: English (TOEFL Score = 99)

#### Relevant Courses

Robotics, Artificial Intelligence, Introduction to Data Structures, Digital Image Processing, Linear Algebra, Discrete Mathematics and Design and Analysis of Algorithms.