

Himanka Kalita

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PhD Researcher CV

Guwahati, India

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TECHNICAL INTERESTS

Machine Learning and Deep Learning, Behavioural Biometrics, Mobile behavioural profile analysis, Mobile behavioural data analysis, Image Processing, Image Sharing and Reconstruction, NLP, Android applications, Git, RESTful APIs, Advanced data analytics, Web simulation and application frameworks, Real Time Embedded Systems, Microprocessors.

EDUCATION

Doctor of Philosophy <i>Applied Electronics</i> Università degli Studi Roma Tre	Nov. 2017 – Present Rome, Italy
Master of Technology <i>Information Technology, CGPA: 4.12/5</i> North Eastern Regional Institute of Science and Technology	Jul. 2013 – Jun. 2015 Nirjuli, India
Bachelor of Technology <i>Computer Science and Engineering, CGPA: 6.8/10</i> Assam Don Bosco University	Jul. 2009 – Jun. 2013 Guwahati, India

WORK EXPERIENCE

Erasmus+ UI/UX Research Intern at Time Village Time Village <ul style="list-style-type: none">Defined personas including motivation, actions, channels.Defined journey sketch and empathy map, analysis of touchpoints.Selection of appropriate UX/UI tool, definition of the optimal UX was done.Analysed current UI and its implementation in the front end.Designed and defined new UI with verification, testing, and implementation of UI.	Jul. 2020 – Feb. 2021 Stockholm, Sweden
Early Stage Researcher for ENCASE (EU H2020 Project) Signal Generix <ul style="list-style-type: none">Our designed CNN architecture was fed with real but anonymized OSN data.OSN is online social networks. The output from CNN was logged and analyzed.We captured extreme cases that fell outside our real OSN activity using CNN.The system also relied on synthetically generated input data.More details in ENCASE website.	Jul. 2019 – Aug. 2019 Limassol, Cyprus
Early Stage Researcher for ENCASE (EU H2020 Project) Telefonica I+D <ul style="list-style-type: none">Provided security to personal and sensitive text content sharing in online websites.Part of PhD research was conducted on EEG brainwave data acquisition and analysis.We developed fake posts from a user's friend in social media specifically Facebook.While viewing fake post (good/bad news) by the user, we recorded their EEG data.Studied the difference of behaviour of the EEG signals using CNN.	Sep. 2018 – Dec. 2018 Barcelona, Spain
Early Stage Researcher for ENCASE (EU H2020 Project) CyRIC <ul style="list-style-type: none">Provided security to personal and sensitive text content sharing in online websites.Researched an NLP module to filter sensitive content from text to be posted online.Input text is supposedly the user's comment or message or any form of text.Successfully implemented a spring based RESTful API service for the NLP module.	May 2018 – Aug. 2018 Nicosia, Cyprus

Administration Assistant Indian Institute of Technology Guwahati <ul style="list-style-type: none"> • Provided remote-access to virtual labs in various disciplines. • Worked on code conversion, analysis, and testing based on C++ and CPPUnit. 	Mar. 2017 – Nov. 2017 Guwahati, India
Computer Science Teacher Kendriya Vidyalaya IIT Guwahati <ul style="list-style-type: none"> • I taught HTML5, CSS, JavaScript, C++, Algorithms, and Computers Systems. • Guided a high school science project with title “Disaster Management”. 	Mar. 2016 – Mar. 2017 Guwahati, India
Developer Summer Intern Indian Oil Corporation Limited <ul style="list-style-type: none"> • Developed a network subnet calculator with input, a sub-netted IP and its subnet mask. • Output provides the detailed information of the whole subnet to which the IP belongs. 	Jun. 2012 – Jul. 2012 Guwahati, India

PROJECTS AND RESEARCH

ENCASE, a European Union H2020 funded project Università degli Studi Roma Tre	2018 – 2020
Virtual Labs Integration Project Phase 2 Indian Institute of Technology Guwahati	2017 – 2017

PUBLICATIONS

- [1] H. Kalita, E. Maiorana, and P. Campisi. “Keystroke Dynamics for Biometric Recognition in Handheld Devices”. In: *2020 43rd International Conference on Telecommunications and Signal Processing (TSP)*. Paper [link](#). 2020, pp. 410–416. DOI: [10.1109/TSP49548.2020.9163524](#).
- [2] H. Kalita, M.M. Singh, and T. Tuithung. “A Reversible Secret Image Sharing Scheme in Matrix Projection Using Discrete Haar Wavelet Transform”. In: *2015 National Conference on Computing, Communication and Information Processing (NCCCIP)*. Paper [link](#). 2015, pp. 105–111.
- [3] E. Maiorana, H. Kalita, and P. Campisi. “Deepkey: Keystroke Dynamics and CNN for Biometric Recognition on Mobile Devices”. In: *2019 8th European Workshop on Visual Information Processing (EUVIP)*. Paper [link](#). 2019, pp. 181–186. DOI: [10.1109/EUVIP47703.2019.8946206](#).
- [4] Emanuele Maiorana, Himanka Kalita, and Patrizio Campisi. “Mobile keystroke dynamics for biometric recognition: An overview”. In: *IET Biometrics* 10.1 (2021). Paper [link](#), pp. 1–23. DOI: <https://doi.org/10.1049/bme2.12003>.
- [5] R. K. Sharma et al. “Android interface based GSM home security system”. In: *2014 International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT)*. Paper [link](#). 2014, pp. 196–201. DOI: [10.1109/ICICT.2014.6781278](#).

SKILLS

Operating System: Windows, Linux
Languages: Assamese (Native), Hindi (B2), English (C2), Italian (A1)
Programming: Python (NumPy, SciPy, Matplotlib, Pandas), Kotlin, C, C++, MATLAB, Java
Web Technologies: HTML5, CSS3, JavaScript, JSON, RESTful APIs
Database: MySQL, Firebase for Android, MongoDB
Document Creation: LaTeX, Microsoft Office Suite
Machine/Deep Learning Frameworks: SciKitLearn, Tensorflow, PyTorch, Keras

REFERENCES

References available upon request.