Vikram Singh

SENIOR UNDERGRADUATE, ELECTRICAL ENGINEERING, AMU

15/28 Krishna Tola, Aligarh, India
Email: vsingh@myamu.ac.in
Website: vikramsingh.tech
Phone: +91-82-659-73123

EDUCATION	**Zakir Husain College of Engineering and Technology, AMU, Aligarh, India**
	Bachelor of Technology, Electrical Engineering *August 2016 - Present*
	CPI: 9.48/10, Rank: 3/76

RESEARCH INTERESTS

Digital Signal and Image Processing, Computer Vision, Machine Learning, Deep Learning, Data Science, Biomedical Image Analysis

PUBLICATIONS

Z.K. Ahmad, **V. Singh**, and Y.U. Khan, "Sequential Segmentation of EEG Signals for Epileptic Seizure Detection using Machine Learning," 2nd International Conference on Signal Processing and Communication (ICSPC), Coimbatore, India, IEEE Explore, 2019, pp. 258-262.

V. Singh, Z.K. Ahmad, and Y.U. Khan, "Extraction of Oral Buccal Mucosa Lesions: An Image Processing Challenge," JTA Multidisciplinary International Conference (JTACON), New Delhi, India, 2020.(In press)

RESEARCH EXPERIENCE

Oral cancer detection and classification using deep learning
*F*inal year project, Aligarh Muslim University, India
Supervisor : Professor Yusuf Uzzaman Khan   *October 2019 - Present*

- The objective is to develop a system for classifying different stages of oral cancer after detection from digital pictures of pre-malignant and malignant buccal mucosa lesions of camp-site patients for scheduling timely diagnostic appointments.

Handwritten signatures extraction and verification using image processing
Visiting undergraduate researcher, University of Quebec, Trois Rivieres, Canada
Interdisciplinary Research Laboratory in Imaging and Combinatorics
Supervisor : Professor Fathallah Nouboud   *June 2019 - September 2019*

- Designed a correlation based off-line signature verification system.
- The signatures were extracted from the various personal identification cards like social insurance cards, driving licenses, and health insurance cards issued by the Government of Canada using computer vision algorithms.
- Subsequently, the signatures were authenticated by calculating the correlation between the extracted features.

Sequential segmentation of EEG signals for epileptic seizure detection using machine learning
Centre of Interdisciplinary Biomedical and Human Factors Engineering, AMU, India
Supervisor : Professor Yusuf Uzzaman Khan   *Oct 2018 - Jan 2019*

- Developed a method intended to ease the burden of intractable seizures by the automatic recognition of interictal epileptiform activity in the intracerebral EEG of epileptic patients.
- Proposed sequential segmentation of EEG followed by feature extraction and selection by PCA.
- Classification implementing different classifiers and evaluated using 10-fold cross validation.

Smart parking system
Summer research intern, Indian Institute of Technology, New Delhi, India
Supervisor : Professor Subrat Kar   *May 2018 - July 2018*

- Developed a system to determine the vehicle occupancy and nearest vacant space as well as updates driver in real-time.
- Used optical character recognition to recognise the slot labels and display them on the screen.
- Successfully designed and implemented in MATLAB on a model prototype.

Awards & Achievements

Globalink Research Internship 2019, MITACS
Selected for the prestigious Globalink Research Internship to participate in a 12-week research in Interdisciplinary Research Laboratory in Imaging and Combinatorics at University of Quebec, Trois Rivieres, Canada.

Khorana Program for Scholars 2019, IUSSTF
Selected among the top 50 students from India for the prestigious Khorana Program for Scholars to pursue research internship at Boston University, Boston, USA.

Merit-based scholarship 2019, Aligarh Muslim University
Awarded a scholarship from the university for continuously ranking among the top three students in the class of Electrical Engineering.

Global Internship Program in Engineering Design and Innovation (GIPEDI), 2018
Selected among the top 25 students from India for the prestigious GIPEDI Program to pursue research internship at Indian Institute of Technology Delhi, India.

Computer Skills

Languages: C, C++, Python
Software & Tools: MATLAB, Tensorflow, LaTeX, LabView, Git, EDFbrowser, HIL
Operating Systems: Linux, MacOS, Windows

Relevant Coursework

- Introduction to Machine Learning by Andrew Ng (Coursera)
- Introduction to Programming with MATLAB (Coursera)
- Neural Networks and Deep Learning by Andrew Ng (deeplearning.ai)
- CS231N - Convolutional Neural Networks for Visual Recognition (Stanford University)
- Advanced MATLAB for Scientific Computing (Stanford University)

Volunteering Experience

International Society of Engineering Science and Technology (ISEst)
Member (Membership No.:SEst18106)   *November 2018 - Present*
 ISEst provide the technical information, advocacy, and professional networking opportunities, whichwill help advance your career. It helps to exchange research information with other people in acrossthe world as well as participate in programming sessions offered at various Conferences, Researchseminars, Workshops and Summer schools throughout the year.

AMU-OSS
Technical Coordinator   *January 2017 - Present*
 We are a community of student developers who love OSS. Our idea is to promote the use anddevelopment of Open Source Software among students in Aligarh Muslim University. We hold weeklymeetings, hackathons, devsprints and guest lectures from seasoned open source programmers. Thecommunity, at present, has more than 200 members.

AMU-ENACTUS
Team Member   *October 2016 - August 2017*
 It is a community of student, academic and business leaders committed to bring positive change inthe society by the power of entrepreneurial action.