KAMALPREET SINGH SALUJA

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` researchgate.net/profile/Kamalpreet_Saluja
` https://scholar.google.com/citations?hl=enuser=N0hIXFUAAAAJ

Machine Learning Engineer focused on NLP, Human Computer Interaction, Augmented Reality and Mixed Reality

EXPERIENCE

Senior Software Engineer - Machine Learning
47 Billion

📅 Jan 2021- Present   📍 Indore

- Researched and Developed a product which offers a multimodal assistive UI with video conferencing platform. The product provided an assistive augmented interface which decouples user from machine using hand gesture recognition, natural user interface using conversational AI's like Rasa, Spacy, etc.
- Developed a framework for Pose Estimation and Correction which provides real time feedback. The system provided a flutter based framework.
- Working on a system for creating digital twin for realtor space. It starts from capturing to deployment using VR/Web/AR.

Research Assistant
I3D Lab, CPDM, Indian Institute of Science

📅 Feb 2018 - Dec 2020   📍 Bangalore

- Designed and developed Interactive Smart Sensor dashboard for **Virtual Reality** Environment with Eye Tracking and developed visualizations for High Dimensional Data.
- Designed and Developed inclusive applications for users with Severe Speech and Motor Impairment(SSMI) using **Eye Gaze Tracking** and also working for Cognitive and Auditory Rehabilitation for Elderly .
- Design and Developed gaze-controlled interfaces for real time in-flight/simulator scenarios and automotive domain.

Research Intern
IDeAS Lab, CPDM, Indian Institute of Science

📅 July 2017 – Jan 2018   📍 Bangalore

- Explored the design space in Life Cycle Assessment (LCA) for any product. OpenLCA is a tool to assess environmental sustainability of Product Life Cycle.
- Developed a Mutually Coordinated Interactive visualization platform tool which can act as a plugin to OpenLCA .

Software Consultant
Innoeye Technologies

📅 6 Months   📍 Indore

- Worked on Project SITEFORGE for Reliance 4G providing Automated Business Rule Validation and Workflow Orchestration. Implemented UI workflows generating automated reports, integrating the Server Backend with Hibernate, Spring MVC and REST.

Journal Publications

- D.V. Jeevithashree, Jain, P., **Saluja, K.,** Biswas, P. (2021). **Multilingual Eye Gaze Controlled Adaptive Virtual Keyboard for Users with SSMI**. *Transactions on Accessible Computing*
- Mukhopadhyay, A., Reddy, G. R., **SALUJA, K. S.**, Ghosh, S., Peña-Rios, A., GOPAL, G., Biswas, P. (2021). **Virtual-reality-based digital twin of office spaces with social distance measurement feature.** *Virtual Reality Intelligent Hardware*, XXXX, XX (XX), 1-21.

ACHIEVEMENTS

🏆 Awarded Best Presenter Award(s) at ICGSP'19 for two sessions.

💻 Designed and Developed ICoRD'19 conference website

🏆 Coordinated Quasar'2021 hackathon and various co- curricular activities for team bonding

SKILLS

Programming Languages
- *Proficient*: C,C++, Java(J2EE), C#.NET, JavaScript,Python
- *Competent*: Three.js , HTML/CSS, JQuery, REST Web Services, Spring MVC, Hibernate, D3.js, JavaFX, Eclipse RCP, Gradle, Maven, Android, MySQL, Unity 3D, Eclipse, Net Beans, Rational Rose, Visual Studio.

Technology Experience
- Eye Gaze Trackers (Tobii), Hand Motion Tracker (Leap Motion), Oculus VR, HTC Vive Pro2 Eye, Raspberry Pi, IoT Sensors (ESP8266, ESP32, BH1750)

Competent ML Exp:
- Machine Learning Model Development, End to End Product Design, OpenCV, Data Visualisation, Data Collection and Modelling, Tensorflow, PyTorch

EDUCATION

B.E. in Computer Science
Rajiv Gandhi Prodyogiki Vishwavidyalaya

📅 July 2012 – June 2016
CGPA: 7.74

- P Biswas, **KPS Saluja**, S Arjun, LRD Murthy, G Prabhakar, VK Sharma and Jeevitha Shree DV, **COVID 19 Data Visualization through Automatic Phase Detection**, *ACM Digital Government: Research and Practice (DGOV) 2020*
- VK Sharma, **KPS Saluja**, LRD Murthy, G Sharma and P Biswas, **Webcam Controlled Robotic Arm for Persons with SSMI**, *Technology and Disability, IOS Press 2020*
- M. D. Babu, JeevithaShree DV, G. Prabhakar,**KPS Saluja** and P. Biswas, **Estimating Pilots' Cognitive Load From Ocular Parameters Through Simulation and In-Flight Studies**, *Journal of Eye Movement Research, Bern Open Publishing, 12 (3), 2019*
- Jeevithashree DV, **KPS Saluja** and P. Biswas, **A case study of developing gaze controlled interface for users with severe speech and motor impairment**, *Technology and Disability 31(1), IOS Press, 2019*
- JeevithaShree DV, **KPS Saluja**, LRD Murthy and P. Biswas, **Operating different displays in military fast jets using eye gaze tracker** , *Journal of Aviation Technology and Engineering 8(1), Purdue University Press, 2018*

Conference Proceedings

- **KPS Saluja**, Jeevithashree Dv, S. Arjun and P. Biswas, **Analyzing Eye Gaze Movement of Users with Different Reading Abilities due to Learning Disability**, *3rd International Conference on Graphics and Signal Processing (ICGSP 2019*, **Best Presentation Award**)
- Arjun, S., **Saluja, K**. P., Biswas, P. (2021, January). **Analyzing Ocular Parameters for Web Browsing and Graph Visualization.** In *tInternational Conference on Research into Design* (pp. 327-337). Springer, Singapore.
- Joseph, A. W., Shree, D. J., **Saluja, K. P. S.**, Mukhopadhyay, A., Murugesh, R., Biswas, P. (2021, January). **Eye Tracking to Understand Impact of Aging on Mobile Phone Applications.** In *International Conference on Research into Design* (pp. 315-326). Springer, Singapore.
- VK Sharma, **KPS Saluja**, V Mollyn and P Biswas, **Eye Gaze Controlled Robotic Arm for Persons with Severe Speech and Motor Impairment**, *ACM International Conference on Eye Tracking Research and Applications (ETRA 2020)* **(Acceptance rate 30'%)**
- LRD Murthy, Somnath Arjun, Kamalpreet Singh Saluja, Pradipta Biswas, Smart Sensor Dashboard, *7th International Conference on PLMSS (Product Life Cycle Modelling, Simulation and Synthesis) 2019*,
- A. Agarwal, JeevithaShree DV, **K S Saluja**, A Sahay, P Mounika, A Sahu, R Bhaumik, V K Rajendran and P. Biswas, **Comparing Two Webcam based Eye Gaze Trackers for Users with Severe Speech and Motor Impairment**, *International Conference on Research into Design (ICoRD 2019)* [**Distinguished Paper Award**]
- Jeevithashree DV, **K. P. Saluja** and P. Biswas, **Gaze Controlled Interface for Limited Mobility Environment**, *ACM International Conference on Designing Interactive Systems (DIS) 2018*
- LRD Murthy ,A. Mukopadhyay, V. Yellheti., S. Arjun, P. Thomas, M. DilliBabu, **K. P. Saluja**, Jeevithashree DV, and P. Biswas, **Evaluating Accuracy of Eye Gaze Controlled Interface in Military Aviation Environment**, *IEEE Aerospace Conference 2020*
- LRD Murthy , S. Arjun, **K. P. Saluja**, P. Biswas, **Interactive Sensor Dashboard for Smart Manufacturing**, *Interactive Sensor Dashboard for Smart Manufacturing*

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