

SHIVAM SINGH

Researcher & Developer ~ Software Engineering
Internet of Things | Human Computer Interaction | Artificial Intelligence

EDUCATION

- **Bachelor of Technology** **CPI: 8.6/10**
Electronics & Communication Engineering
Sam Higginbottom Institute of Agriculture Technology and Sciences, Allahabad, India
June 2014
- **Higher Secondary Class (XIIth)**
SOS Hermann Gmeiner School, Varanasi, Uttar Pradesh (India) **Percentage: 82%**
2010
- **Senior Secondary Class (Xth)**
Ma Durga Ji Vidyalaya, Jaunpur, Uttar Pradesh(India) **Percentage: 85%**
2008

WORK – EXPERIENCE

- Researcher & Developer Nov 2016 – Present
Accenture Labs, Accenture, Gurugram, India
Responsibilities: Research (Internet of Things, Artificial Intelligence, Healthcare, Accessibility Solutions), Development (Open Innovation, Healthcare Solutions)
Research Undertaken: Accessibility Solutions for Blind (Complete Solution development), Wearable Devices Integration, Multimodal interfaces for socially challenged people
- Product Development May 2015 – Oct 2016
Accenture Digital, Accenture, Hyderabad, India
Client: Novartis Pharmaceuticals (Healthcare Project)
Projects Undertaken: Application design and development, Innovation
Responsibilities: End to end development and delivery.
- Freelance User Experience Developer June 2014 – April 2015
Projects Undertaken: Product design and development
Responsibilities: End to end development and delivery.

PUBLICATIONS & SUBMISSIONS

- Anurag Bhandari, Nishith Pathak and Shivam Singh, “**Designing a Multilingual Virtual Agent Capable of Interacting with Uneducated People**”, **Accepted** at GHCI 2017, *Grace Hopper Celebration India-Conference November 2017*, Bangalore International Exhibition Centre, November 2017
- Anurag Bhandari, Nishith Pathak and Shivam Singh, “**Designing a Multilingual Virtual Agent Capable of Interacting with Uneducated People for Automated Data Collection**”, **Accepted** at *IEEE Symposium Series on Computational Intelligence*, 2017, Honolulu, Hawaii, USA November 2017

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RESEARCH – EXPERIENCE

Integration of Wearables with Accessibility solution for Blind

Research Project: (February 2017 - Present).

Supervisor: Anurag Bhandari

- Couple of prototypes were designed for integration with mobile based accessibility application.
- Different gesture based sensors were tested on a Raspberry Pi Zero Test bed to be integrated with the device.
- Custom eyeware design is being developed to suit the low power consumption and highly efficient output parameters.
- The usage window was found between 15-20 minutes with wireless connection which was using 802.11 a band for connectivity.

Designing Accessibility Solution for Visually Impaired Audience

Research Project: (January 2017 - June 2017).

Supervisor: Anurag Bhandari

- A prototype with cross platform code base was developed and tested.
- The application is designed for keeping wearables and its significance in mind.
- The design of the prototype was finalised with keeping target users, i.e visually impaired, in design thinking process.
- The language used to develop the application was Typescript and a Machine Learning model was developed to process and label images. Efforts were to be made on, to integrate it wirelessly with eye-wares and glasses.
- The user acceptance testing was done with the help of NGOs for visually impaired people.

Designing a Multilingual Virtual Agent Capable of Interacting with Uneducated People for Automated Data Collection

Research Project: (November 2016-May 2017).

Supervisors: Anurag Bhandari & Nishith Pathak

- A multilingual virtual agent was conceptualized, designed and prototyped.
- Face models were designed and simulated for specific talks and expressions.
- A cross platform code implementation was done and tested with deploying in various platforms and devices.
- The problem of language support was addressed by providing support for various regional and standard language.
- A much personalized and accurate result experience was recorded with no human element involved.
- A lightweight thin client model approach was adopted and optimized which provided high performance even in low connectivity.

Implementation of Intelligent Automation based Solutions for Complex Social Problems

Ref Paper: Sanjay, Janardan, Senthil, Neville, Indrani. Designing Intelligent Automation based Solutions for Complex Social Problems, *ICML 2016*

Design & Development Project: (November 2016- February 2017).

Supervisor: Anurag Bhandari & Nishith Pathak

- Paper implementation suggested that the application must take into account the connectivity loss and network reach to be successfully implemented.
- An offline trained Machine Learning model with the formula concluded in original research was to be integrated with the developed application.

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- The offline model provided the basic Vulnerability Index calculation of prone users and synced with online model when in reachable connectivity for completely accurate vulnerability.

RELEVANT – COURSE

- Digital Design
- Operating Systems
- Object Oriented Software Development and Design
- Web Design and Development
- RESTful Web Services
- Design Thinking
- Artificial Intelligence & Machine Learning

ACCOLADES / PROFESSIONAL – HONOURS

- Awarded the prestigious Accenture Celebrates Excellence for Innovation in April 2017 for contributions in field of Research and Development.
- Awarded Accenture Labs Sunshine Award in March 2017, for exemplified research work.
- Awarded 3rd position(Team Award) for our submission of a friendly virtual assistant named “*LUNA-Language Understanding and Narrative Assistant*” for answering queries related to STEM, STEM challenge - Inspiring girls in field of STEM , Accenture Technology Labs, Bangalore, India, February 2017.
- People Developer Recognition by Accenture Japan.

WORKSHOPS / EVENTS

- Presenting-*Grace Hopper Celebration India (GHCI 2017)* conference at Bangalore International Exhibition Centre, November 2017
- Presenting-*IEEE Symposium Series on Computational Intelligence (SSCI 2017)* conference at Honolulu, Hawaii, USA November 2017
- Inspiring girls in field of STEM , Accenture Technology Labs, Bangalore February 2017
- Coordinated- Quizzes & Competitions at Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad, India..
- Member- Technical Society of Electronics, SHIATS, Allahabad, 2013-2014.

TECHNICAL – SKILLS

- Programming Languages: JavaScript(Browser & Node), C#, Typescript, HTML5, C++, R
- Server Side Frameworks: ASP .NET MVC, WebApi, NodeJS, RESTful Web Services
- Client Side Frameworks: Angular 4, ReactJS, Progressive Web Apps, jQuery, Bootstrap and CSS
- Mobile Frameworks: Ionic 3, Cordova
- Operating Systems: GNU Linux, macOS(Unix) and Windows
- Cloud Technologies: Microsoft Azure
- IDE: Visual Studio Code, Visual Studio 2017, Xamarin Studio
- Tools: Git, TFS, Reallusion Crazytalk, Node Package Manager, MATLAB
- IELTS Score: Band 7

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REFERENCES

- **Professor M. Radhakrishna**
Ret. Professor, Indian Institute of Information Technology, Allahabad.
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- **Nishith Pathak**
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- **Anurag Bhandari**
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Accenture Labs, Accenture, Gurugram, India
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Infrastructure Lead, Open Mandriva
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CONTACT – INFORMATION

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