RITESH KUMAR

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Scientist at CSIR-Central Scientific Instruments Organisation, Chandigarh, India, interested in the area of big data analytics, perception modeling and, artificial intelligence.

Education

2012-2017 **ACADEMY OF SCIENTIFIC & INNOVATIVE RESEARCH** Chandigarh, India
Ph.D. Analysis of structure-odor relationship: A computational approach

2009 - 2011 **ACADEMY OF SCIENTIFIC & INNOVATIVE RESEARCH** Chandigarh, India
M.Tech. Advanced Instrumentation Engineering, CGPA: 8.5/10

2005 - 2009 **MANIPAL INSTITUTE OF TECHNOLOGY** Manipal , India
B.E. Computer Science , CGPA: 8.83/10

Experience

2011-Present **CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION** Chandigarh, India
SCIENTIST, Agrionics group

Key Skills Machine Learning, NLP, Android Development, Big Data, MATLAB, Python, C, C++, JAVA

Biomimetic Artificial Organoleptic Systems

- Creation of odor maps and database to understand the concept of odor spaces and primaries in olfaction.
- Developed a SNN based architecture and its mathematical formulations used for e-nose data

ICT for Bioinformatics applications

- Software for early and late stage thyroid and skin cancer patients based on genomics data
- Developed a JAVA based software and an android app for classification of hemolytic potency of peptides.

ICT in Agriculture

- Developed a hand-held system for plant health monitoring based on color measurements of leaves. Developed algorithms to map nitrogen content of plant to the colour of leaves.
- Developed an android app for spatio-temporal mapping and recommendation of urea to farmers.

Industry Projects

- Data analysis for prediction of cashew nut rancidity for nanoPix ISS (P) Ltd., Karnataka.
- Designed experiments, collected data and analysed engine oil quality based on impedance spectroscopy for TATA Motors, Pune.
- Developed software and android app for pattern matching and color to wavelength association for detection and authentication of UV sensitive inks for M/S Aron, Karnataka (CSIR-NMITLI).
- Developed software to determine degree of un-saturation of oils for M/S Vaisheshika Electron devices, Ambala.

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Teaching Experience

CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION Chandigarh, India
Contribute to curriculum design, Responsible for conducting lab and tutorials for MTech and supervising students for Machine learning course.

Industry Experience

CITRIX RESEARCH AND DEVELOPMENT Bangalore, India
INTERN, ICA group

- Programmed unit tests for File System network provider drivers, a major step towards completion of refactored legacy code and developed a mock library to be used in the company.

Awards

Among the winning teams "Grand Challenge: Smart Embedded Applications & IoT 2016" by IIT, Patna; Volkswagen Foundation sponsorship for attending conference in Germany; Quick Hire Scientist (Trainee) Fellowship for M.Tech

Representative Publications

- Andreas Keller, Richard C. Gerkin, Yuanfang Guan, Dream Challenge Consortium (**Ritesh Kumar**, Rishemjit Kaur, Amol P Bhondekar, Gajendra Pal Singh Raghava) et al. Predicting human olfactory perception from chemical features of odor molecules, eaal2014, Science, 2017, Impact Factor: 35.26
- **Ritesh Kumar**, Rishemjit Kaur, Benjamin Auffarth, Amol P Bhondekar, Understanding the Odour Spaces: A Step towards Solving Olfactory Stimulus-Percept Problem, e0141263, PloS one, 2015, Impact Factor: 3.05
- **Ritesh Kumar**, Amol P Bhondekar, Rishemjit Kaur, Saru Vig, Pawan Kapur. A simple electronic tongue, Sensors and Actuators B: Chemical, 171–172, 2012, 1046–1053, Impact Factor: 5.401
- 14 peer-reviewed Journal publications, 8 conference presentations, 1 book chapter, 5 open source softwares, **Total Impact Factor : 114**