Kavin Chandrasekaran

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SUMMARY

With expertise in both information security and data science, I offer a unique perspective on data procurement and handling for machine learning applications. I have experience working with diverse data types, including structured tables, sensor and audio signals with missing data, and unstructured texts, and have applied techniques like data cleaning, feature extraction, and modeling to extract meaningful insights. My experience includes developing machine learning models for human activity prediction, designing optimization models for crop growth, and utilizing topic modeling to summarize reviews. I excel in problem-solving and thrive in a collaborative, fast-paced work environment.

EDUCATION

- **Worcester Polytechnic Institute**   Worcester, MA
  PhD in Data Science   *December 2023(Expected)*
- **Indiana University**   Bloomington, IN
  Masters in Security Informatics   *May 2013*

SKILLS SUMMARY

- **Languages**: Python, Java, SQL
- **Data Visualization Tools**: Tableau
- **Frameworks**: Hadoop, Spark, MongoDB, PyTorch, Scikit-learn, Streamlit

EXPERIENCE

- **Research Assistant - Prof. Emmanuel Agu**   May 2018 - Current
  Worcester Polytechnic Institute   *Worcester, MA*
  - Designed and developed machine learning and deep learning architectures to recognize complex human activities through sensor data, with the goal of enhancing patient monitoring, predicting ailments, and improving overall healthcare
  - Conducting research on generating synthetic sensor data using minimal time-series-based smartphone sensor data to address the scarcity of sensor data for complex human activity

- **Data Science Intern**   May 2022 - August 2022
  Clean Crop Technologies   *Holyoke, MA*
  - Built an end-to-end data science framework to aid in the adaptive design of experiments for sustainable food production research
  - Designed optimization models to determine optimal in-lab experiment parameters that maximized crop growth while preserving quality

- **Sr. Infrastructure Services Engineer**   July 2013 - December 2015
  National Government Services   *Indianapolis, IN*
  - Created data visualization dashboards to present application efficiency and availability data, resulting in streamlined communication with stakeholders and reduced response time during troubleshooting of application failures

SELECTED PUBLICATIONS

Peer-reviewed Publications

1. *Get Up! Assessing Postural Activity & Transitions Using Bi-Directional Gated Recurrent Units On Smartphone Motion Data*

   K. Chandrasekaran, W. Gerych, L. Buquicchio, E. Agu, & E. Rundensteiner. IEEE Healthcare Innovations and Point-Of-Care Technologies, 2019.

2. *CARTMAN: Complex Activity Recognition Using Topic Models for Feature Generation from Wearable Sensor Data*
   K. Chandrasekaran, L. Buquicchio, W. Gerych, A. Alajaji, E. Agu, & E. Rundensteiner. IEEE International Conference on Smart Computing (SMARTCOMP), 2021.

SELECTED ACADEMIC PROJECTS

- **PlentyOfReviews (Spring 2018)**: Designed a website that offers users a select number of diverse reviews from a vast collection of reviews for a particular Airbnb listing, utilizing machine learning techniques like topic modeling
- **Country classification based on accent (Spring 2018)**: Developed a neural network-based multi-task learning approach to identify a person's country of origin using audio recordings