Sen (Forrest) Yang

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| EDUCATION | |
| Rutgers University, the State University of New Jersey | Piscataway, NJ |
| • M.S & Ph.D., in Electrical & Computer Engineering, GPA 3.9/4.0, GRE 1510, TOEFL 103 | Sept 2013 - Present |
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| Nanjing University of Posts and Telecommunications, China | Nanjing, China |
| • B.A., in Communication Engineering | Sept 2008 – June 2012 |

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| WORKING EXPERIENCE | |
| Huawei Technologies Co. Ltd. | Shenzhen, China |
| • Software Engineer in GSM, LTE network maintenance | Aug 2012 – June 2013 |
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| Rutgers University & Children’s National Medical Center (CNMC) | Piscataway, NJ & Washington, D.C. |
| • Research Assistant | Aug 2014 - Present |

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| RESEARCH AND PROJECTS | |
| 1. Smart Trauma Resuscitation Decision Support System | *NIH Project, Rutgers & CNMC*, Aug 2014 - Present |
| • During trauma resuscitation, multidisciplinary teams rapidly identify and treat potentially life threatening injuries, then develop and execute a short-term management plan for the identified injuries. To improve medical team performance and reduce the adverse outcomes on the patients, we are developing a computerized decision support system for trauma resuscitation and other fast-paced, high-risk critical care settings that monitors workflow for errors and then alerts to these errors, allowing remedial actions to be taken to prevent adverse outcomes. | |
| • Develop knowledge-based workflow models and repair models using data | |
| • Identify and analyze the workflow deviations using process mining techniques | |
| • Develop a computerized decision support system that identifies and provides real-time alerts of risk conditions to medical team | |
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| 2. Recommender System for Medical Treatment Procedures (VIT-PLA 2.0) | *NIH Project ,Rutgers*, Sept 2016 - Present |
| • A novel pairwise process trace similarity measure was proposed | |
| • State-of-art clustering algorithms were tested and a novel algorithm to decide the number of clusters was proposed | |
| • A novel algorithm for calculating representative treatment procedure was proposed | |
| • Regression model was used for treatment procedure recommendation | |
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| **3. Workflow Model Mining based on State-Splitting HMM** | *NIH Project, Rutgers*, Sept 2016 - Present |
| • We proposed an alignment based state-splitting HMM that can greatly speed up the HMM training process | |
| • The workflow model discovered using State-Splitting HMM algorithm can handle duplicate activities | |
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| **4. Visual Interactive Tool of Process Log Analysis (VIT-PLA)** | *NIH Project, Rutgers*, Sept 2015 – Sept 2016 |
| • Cluster process traces, Use trace alignment algorithm to find cluster prototype, and visualize the results. | |
| • Use multinomial logistic regression to discover the association between process clusters and process context attributes | |
| • Acquire knowledge from cluster prototypes and regression results | |
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| **5. Sudoku Solver** (Java, Java Swing) | *Course Project, Rutgers*, Sept 2014 – Dec 2014 |
| • A Java-app to solve Sudoku with backtracking, simulated annealing, dancing links and our novel algorithm. | |
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| **6. NBA Game Winner Prediction (**Python, SQL**)** | *Course Project, Rutgers*, Jan 2014 – May 2014 |
| • Crawl ESPN website for game data and player data in each game |  |
| • Predict the winner of each NBA game using different classifiers |  |
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| **7. Web Development for Stock Forecast (**PHP, JS, HTML, CSS**)** | *Course Project, Rutgers*, Jan 2014 – May 2014 |
| • Collect historic stock data from Yahoo finance |  |
| • Predict stock price using HMM, Curve Fitting, and ARMA models |  |
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| **8. Health Monitoring Analytics based on Twitter (**Android,Java, MongoDB**)** | *Course Project, Rutgers*, Sept 2013 – Dec 2013 |
| • Query tweets that correlated to health and fitness using Twitter APIs |  |
| • Data visual analytics in Android app |  |

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| RECENT PUBLICATIONS | |
| 1. A Data-driven Process Recommender Framework |  |
| **Sen Yang**, Xin Dong, Leilei Sun, Yichen Zhou, Richard A. Farneth, Hui Xiong, Randall S. Burd and Ivan Marsic | 2017 Submitted |
| *Submitted to 2017 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2017)* |  |
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| 2. Workflow Association Mining Using Deep Learning |  |
| Moliang Zhou, Xinyu Li, Yanyi Zhang, **Sen Yang**, Shuhong Chen, Richard A. Farneth, Ivan Marsic and Randall S. Burd | 2017 Submitted |
| *Submitted to 2017 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2017)* |  |
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| 3. Automatic Workflow Capture and Analysis for Improving Trauma Resuscitation Outcomes |  |
| **Sen Yang** | 2016 Accepted |
| *Doctoral Consortium in 2016 IEEE International Conference on Health Informatics (ICHI 2016)* |  |
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| **4. VIT-PLA: Visual Interactive Tool for Process Log Analysis** |  |
| **Sen Yang**, Xin Dong, Moliang Zhou, Shuhong Chen, Ivan Marsic, and Randall S. Burd | 2016 Accepted |
| *KDD 2016 Workshop on Interactive Data Exploration and Analytics (IDEA 2016)* |  |
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| **5. Duration-Aware Alignment of Process Traces.** |  |
| **Sen Yang,** Moliang Zhou, Rachel Webman, JaeWon Yang, Aleksandra Sarcevic, Ivan Marsic, and Randall S. Burd | 2016 Accepted |
| *Industrial Conference on Data Mining. Springer International Publishing, 2016* |  |

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| DATA VISUAL ANALYTIC TOOLS (DEVELOPED AND LEAD BY ME) | |
| Visual Interactive Tool of Process Log Analysis (VIT-PLA) |  |
| • JAVA-App (<https://forrestyang119.github.io/>) | Developed in 2017 |
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| VIT-PLA 2.0 |  |
| • Web-App (<http://34.198.151.101/test.html>, prototype for testing purpose) | Developed in 2016 |

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| RESEARCH INTERESTS |
| • Data Mining and Knowledge Discovery, Algorithms, Process Mining, Software Engineering in Data Visual Analytics, Deep Learning in Big Data Analytics. (Specialty: Temporal Event Sequences, Process Logs, Workflow Data) |

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| RELATED COURSES |
| • Machine Learning, Data Mining, Data Struct & Algo, Data Analytics, Softwr Engg, Web App Design, Mobile App Design, Computer Architecture, Linear Algebra, Regression Models (Coursera) |

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| TECHNICAL STRENGTH (SORTED BY PROFICIENCY) | |
| Languages | Java, Matlab, R, Python, Android, Java Swing, C++/C, PHP, JSP, JavaScript, HTML, CSS |
| Database Systems | MySQL, Oracle SQL Database, Mongo DB, AWS Could SQL, Google Cloud SQL |
| **Data Mining Skills** | Data Visualization, Process Mining, Web Crawling |
| **Operating Systems** | Win 10, MacOS Sierra, Ubuntu 16 |
| **Enterprise Tools** | Office (skilled in macro), Eclipse, Matlab, Netbeans, RStudio, Visual Studio, Latex |

ADVISOR

Ivan Marsic ([www.ece.rutgers.edu/~marsic/](http://www.ece.rutgers.edu/~marsic/))