

BARNAN DAS

(208) 596-1169 ✉ barnandas@gmail.com 🌐 www.barnandas.com
LinkedIn: www.linkedin.com/in/barnandas

OBJECTIVE

To be involved with challenging software product development activities in cutting-edge technology domains.

EDUCATION

Doctoral Program (PhD), Computer Science **Fall 2009-Spring 2014(Expected)**
Washington State University, Pullman WA **GPA: 3.81/4.00**
Thesis Topic: *Addressing machine learning challenges in pervasive computing*

Bachelor of Technology, Computer Science and Engineering **2005-2009**
West Bengal University of Technology, Kolkata, India **GPA: 8.91/10.00**

SKILLSET

<i>Research Domains</i>	Machine Learning, Data Mining, Pattern Recognition, Wearable Computing
<i>Languages</i>	Native and Managed C++, C, Java, Python, HTML, CSS, Bash shell, SQL
<i>Mobile Platform</i>	Android SDK
<i>Development Tools</i>	MS Visual Studio, Eclipse, MS Visio, Adobe Dreamweaver
<i>Machine Learning/Data Analysis Tools</i>	Weka, MATLAB/Octave, LIBSVM, MALLETT, Rapid Miner, Orange
<i>Operating System</i>	Windows, Linux/UNIX

PROFESSIONAL EXPERIENCE

Graduate Technical Intern **May 2013-Jaunary 2014**
Intel, PC Client Group

- Implementing face recognition factor provider for Intel's No Password initiative.
- Developing a proof-of-concept Windows credential provider app using face and voice recognition.
- Developing an UX tool for Intel Labs to perform Region-Of-Interest video encoding for video conferencing over poor bandwidth network connectivity.

Research Assistant **Summer 2010-Spring 2013**
Washington State University

- Designed and implemented machine learning algorithms on smart home sensor data.
- Conducted experiments with human subjects to collect daily activity data from smart home sensor network.
- Developed Android app to collect locomotive user activity data from smart phone-based sensors.
- Developed prompting interface (phone and tablet) for the elderly to deliver audio/video prompts in smart homes.

Teaching Assistant **Fall 2009 – Spring 2010**
Washington State University

- Courses: Advanced Data Structures (Sophomore) and Formal Language and Automata Theory (Junior).
- Graded programming assignments and homework, conducted in-class problem solving sessions with students.

ACADEMIC PROJECTS

- **Learning from Class Imbalanced Data** (2011-2013): Designed and implemented two novel minority class oversampling algorithms that improved true positive rate of common classifiers by 58% over other existing oversampling techniques used to preprocess datasets with skewed class labels. *Java, MATLAB*
- **Learning from Overlapping Classes Data** (2011): Designed and implemented a novel clustering-based under-sampling algorithm that improved true positive rate of common classifiers by 132% over other techniques used to preprocess datasets with overlapping classes. *Java, MATLAB*
- **Automated Essay Scoring** (2012): Developed an automated essay grader using Natural Language Processing (NLP) algorithms to predict scores for K-12 student essays which achieved 68.5% prediction accuracy. *Java, NLP APIs*

- **Prompting Interface for Smart Homes** (2012): Android app for phone and tablet to deliver audio/video prompts to older adults in smart homes. Used XMPP (Jabber) client, Smack API, to connect to XMPP server that receives command for prompt delivery. **Android SDK**
- **In-Home Location Estimation** (2012): Exploratory project on the potential of magnetic field data from smart phones to recognize indoor locations. Achieved 98.5% classification accuracy using machine learning algorithms such as decision tree and support vector machines. **Android SDK, Weka, MATLAB**
- **Locomotive Activity Recognition on Smart Phones** (2010-2011): Android app to perform real-time classification of locomotive activities (walking, running, etc.) using tri-axial accelerometer on smart phones. **Android SDK, Weka**

SELECTED PUBLICATIONS

- **B. Das**, N. C. Krishnan, D. J. Cook, “*RACOG and wRACOG: Two Gibbs-Sampling Based Oversampling Techniques*”, submitted to **IEEE Transaction on Knowledge and Data Engineering (TKDE)**, 2012.
- **B. Das**, N. C. Krishnan, D. J. Cook, “*Handling Imbalanced and Overlapping Classes in Smart Environments Prompting Dataset*”, Springer Book on Data Mining for Services in **Studies in Computational Intelligence**, 2012.
- **B. Das**, D. J. Cook, M. Schmitter-Edgecombe, A. M. Seelye, “*PUCK: An Automated Prompting System for Smart Environments*”, **Journal of Personal and Ubiquitous Computing**, 2012.
- **B. Das**, C. Chen, A. M. Seelye, D. J. Cook, “*An Automated Prompting System for Smart Environments*”, International Conference on Smart Homes and Health Telematics (**ICOST**), 2011.
- E. Nazerfard, **B. Das**, D. J. Cook, L. B. Holder, “*Conditional Random Fields for Activity Recognition in Smart Environments*”, International Symposium on Human Informatics (**SIGHIT**), 2010.
- C. Chen, **B. Das**, D. J. Cook, “*A Data Mining Framework for Activity Recognition in Smart Environments*”, International Conference on Intelligent Environments (**IE**), 2010.
- **B. Das**, D. J. Cook, “Data Mining Challenges in Automated Prompting Systems”, **IUI Workshop on Interaction with Smart Objects Workshop (InterSO)**, 2011.
- **B. Das**, C. Chen, N. Dasgupta, D. J. Cook, “Automated Prompting in a Smart Home Environment”, **ICDM Workshop on Data Mining for Service**, 2010.
- C. Chen, **B. Das**, D. J. Cook, “Energy Prediction Using Resident’s Activity”, **KDD Workshop on Knowledge Discovery from Sensor Data (SensorKDD)**, 2010.

AWARDS & ACTIVITIES

- Highly Commended Paper Award for Locomotive Activity Recognition project out of 75 accepted papers at The 8th International Conference in Intelligent Environments, 2012.
- Founding member and elected vice president of Society for EECS Graduate Students at Washington State University.
- Elected senator for Graduate and Professional Student Association at Washington State University.
- Student member of IEEE, ACM and AAAI

REFERENCES

Available on request.