

# Bo Yang

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## Education

- **University of Central Florida** **Orlando, FL**  
Computer Science, M.S. **08/2012 – 05/2014**
    - Research interests: Machine Learning, Computer Vision, Bioinformatics
    - G.P.A. 3.7/4.0
  - **Beijing Institute of Technology** **Beijing, CN**  
Automation, M.E. **09/2006 – 06/2008**
    - Research interests: Intelligent systems, Electromagnetic Compatibility
    - Thesis: *Research on EMI Pre-Estimate and Intelligent Fault-Diagnosis System*
  - **Nanjing Normal University** **Nanjing, CN**  
Electrical & Automation Engineering, B.S. **09/2002 – 06/2006**
    - Thesis: *A New Algorithm for Multi-task Scheduling in Distributed Control System*
    - G.P.A. 85/100
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## Work Experience

- **University of Central Florida** **Orlando, FL**  
*Teaching Assistant* **08/2013 – 05/2014**
    - COP 4020: Programming Language I (Spring 2014)
    - CGS 3763: Operating System Concepts (Fall 2013)  
*Research Assistant* **08/2012 – 08/2013**
  - **Alcatel-Lucent** **Beijing, CN**  
*Software Engineer* **07/2008 – 07/2012**

My job was to maintain Alcatel-Lucent's inner network-level simulation & test environment for the company's wireless products. Instead of maintaining very expensive physical labs, our platform could support most tests in distributed low-end physical/virtual machines at any time any place with an Internet connection.

As a developer, I developed new features for the platform using C/C++, Ksh, Perl, Tcl/Tk, expect and other in-house languages. The features that I delivered included transplanting new wireless products(or features) into our test environment, deploying virtual machines(VMware ESXi), porting the environment from Solaris to Linux, and new functions to meet users' requirements. As an advocate, I supported worldwide developers and testers who used our platform, maintained hundreds of servers and provided regular trainings for our users. Besides, I also coached new employee and interns for our team.

During the four years in Alcatel-Lucent, I delivered 20+ new features to our environment, solved 200+ users' issues and provided 7 training sessions to our users. And as a whole, my team saved the company millions of dollars and speeded up the development of dozens of new wireless features.
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## Research Projects

- **Action Recognition with Fisher Vector and Dense Trajectories** **01/2014 – 02/2014**

This project aimed to do human action recognition on dataset UCF 101 with the Improved Dense Trajectory Features(IDTF) encoded by Fisher Vector. After extracting the IDTF of UCF 101 video clips, I

implemented the pipeline of Fisher Vector encoding and linear SVM classification in Matlab. In my code, for each video clip, 1000 IDTF features were randomly subsampled, and 256 Gaussian Mixture Models(GMMs) were trained as the codebook based on the dimension-reduced(by PCA) input features. Finally I got a mean accuracy of 85.53% on dataset UCF 101 with the IDTF features.

- **Action Recognition with Deep Learning** 08/2013 – 11/2013  
This project aimed to do human action recognition on dataset UCF 101 using Independent Subspace Analysis(ISA) neural network. The ISA networks can learn features that are robust to local translations with unsupervised training. In my Matlab implementation, cuboids were used as low-level visual features, and two convolutional ISA layers were trained layer-by-layer without labeled data. The learned features were classified by a  $\chi^2$ -kernel SVM classifier. With the ISA net, the mean accuracy of action recognition was 59.6%, which was about 15% higher than the baseline.
- **Metagenomic Binning with Generalized Poisson Model** 09/2012 – 05/2013  
Metagenomics is the study of microbial communities sampled directly from their natural environment, without prior culturing. In this project, I designed and implemented a Generalized Poisson Distribution(GPD) model in C++ to cluster metagenomic reads into as many species as possible. The GPD parameters were learned by EM algorithm, and the optimum number of species was determined by the Calinski-Harabasz Index. Genomic features such as GC content and 4-mer(4 continuous nucleotides) distributions were also adopted as heuristics for finer classification. Finally my GPD model could identify more species than the well-known AbundanceBin method.
- **EMI Measurement & Fault-Diagnosis System** 08/2007 – 05/2008  
This project tried to provide a complete solution of EMC(Electromagnetic Compatibility), including EMI(Electromagnetic Interference) prediction, measurement and faults diagnosis. Spectrum analyzer and Rohde & Schwarz EZ-17 probes were used as the hardware. I implemented the software in Visual C++(MFC) and SQL server, which integrated empirical functions for EMI prediction, EMI measure/plot software and an intelligent EMI fault-diagnosis system(a hybrid of Case-based Reasoning and expert system).

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## Publications

- XU Long, GU Juan, **YANG Bo**, et al., *Common Test Platform Based on Virtualization and Cloud Computing*, the Alcatel-Lucent China Product R&D Technical Symposium, December 9, 2011, Shanghai, China (Best Paper Award)
- GAN Ming-Gang, CHEN Jie, **YANG Bo**, et al., *Intelligent Fault Diagnosis Research of Electromagnetic Interference Based on the Combination of CBR and RBR*, the 29th Chinese Control Conference (CCC), July 29-31, 2010, Beijing, China

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## Technical Skills

**Programming Languages:** C/C++, Matlab, Shell, Perl, Python, Tcl/Tk, Expect, JavaScript, AWK, SED, Visual Basic, Java, Go, SQL  
**Operating Systems:** Unix/Linux, Mac OS X, Windows  
**Databases:** MySQL, Oracle, SQL Server

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## Awards & Honors

- Best Paper Award, by Alcatel-Lucent China Product and R&D Dec, 2011
- China National Stipend, by State Council of China Oct, 2005

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## Services

- Volunteer of conference ACM-BCB 2012, Orlando, FL USA Oct, 2012