Jiaqi Mu

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EDUCATION

Bachelor of Science, Electronic and Information Science
Tsinghua University, Beijing, China, expected July, 2014

GRADES

GPA: 92.38/100 with required course, 93.36/100 with major required course
RANK: 10/253 of department, 1/31 of class
TOEFL: 30+28+22+29

AWARDS & HONERS

First Prize(Hubei Province Level) in Chinese Mathematics Olympiad(50/3000) 2009	
Overall Excellent Scholarship of Tsinghua University(20/250)	2011/2012
First Prize in University Physics Competition of Beijing	2011
Second Prize in University Mathematics Competition of Beijing	2011
Excellent Volunteer of Q&A Center	2011

RESEARCH EXPERIENCES

Online Network Data Mining - Its Collection, Analysis and Display
Advisor: Prof. Yuantao Gu   Sept, 2012 - Present
Research Institute of Telecommunications

- Systematically viewed and compared almost all evolution models, and the information diffusion models.
- Developed an algorithms based on information tree to reduce the large data of large-scale networks based on its sparsification and the characteristics of information flow;
- Simulated the diffusion processes based on IC, LT and AsIC, AsLT models on MATLAB;
- Processing big data from Sina Weibo with C# to extract the exact information diffusion traces of interest, estimating parameters of the models, applying the differences of parameters into Information Classification, Influence Estimation and etc.

Cipher Channel Modeling
Advisor: Prof. Jian Wang   Mar, 2013 - Present
Research Institute of High-Speed Signal Processing and Network Transmission

- Combined encryption module, physical transmission channel, and decryption module to an equivalent end-to-end encrypted channel for the first time;
- Analysed the channel and calculated the transition probability of CBC mode encrypted channel(CBCC) in closed theoretical form;
- Evaluated the performance, such as Frame Error Ratio(FER), Gap Distribution, Error Weight Distribution of CBCC based on transition probability;
- Established a project combined with MATLAB and C to confirmed the analyses with excellent match of the statistics on experimented Data Encryption Standard (DES)-based and Advanced Encryption Standard (AES)-based cryptosystems of CBC mode.

Power Allocation and Waveform Design of MIMO Radar
Advisor: Prof. Jian Wang   Mar, 2012 - Mar, 2013
Research Institute of High-Speed Signal Processing and Network Transmission

- Investigated Diffusion Adaptation Over Networks in statistical signal processing by self-studying *Adaptive Filter* and works of Ali H. Sayed;
- Established the model for multi-target detection based on Sequential Hypothesis Testing(SHT) theory and Kullback Leibler(KL) Divergence;
- Optimized waveform and power allocation in the case with AWGN channel after self-studying *Convex Optimization*;

SELECTED COURSE PROJECTS	**32-bit MIPS processor on FPGA**	

32-bit MIPS processor on FPGA

Fundamental Experiment of Digital Logic and Processor   July, 2012
- Developed a single cycle processor and a pipelined processor, focused on minimizing the Area-Delay product, with the working frequency 50MHz and 100MHz, respectively;
- Built an Assembly language Compiler in C++ to turn the Assembly language(MIPS) into Machine Laguage;
- Realized the calculation process of Greatest Common Divisor(GCD) on our self-designed CPU.

Single-Lead-ECG-Derived Respiration with Kernel PCA Method

Probability and Stochastic Processes (2)   Nov, 2012
- Simulated the existed respiration process methods with kPCA, PCA and adaptive filters using the database PHYSIONET on MATLAB;
- Developed a new methods to obtained respiration signal from ECG based on Matched Filter(MF) and Least Mean Square(LMS) estimation.

SKILLS

Image Processing	PhotoShop
FPGA Programming	Xilinx IDE, Modelsim
Circuits Simulation	Multisim, Ultiboard, Pspice
Languages	C/C++/C#, MATLAB, Verilog, LaTeX

ACTIVITIES

Quidditch Association   Oct, 2012 - Present
- Established the first real Chinese Quidditich Association(CQA) in Beijing;
- Held two Quidditich Games, one was in Chaoyang Park, Oct, 2012, the other is in Beijing Foreign Studies University(BFSU), Nov, 2012 with sponser Linkkk;
- Held a Salon in Danglv Cafe in BFSU and attracted a large number of students in BFSU.

Student Union Member   Fall, 2011 - Fall, 2012

Propaganda Department
- Core member of the department;
- Designed the posters and its surroundings of the most important activity every year, our student festival, and which have got most praise among recent years;
- Organized the material database, such as icons, pictures, slogans, etc.

Q & A Center   Fall, 2011 - Mar, 2012

Student Career Development Center
- Volunteered help alumni with algebra, calculus and physics;
- Helped a junior girl with her high school entrance exam, and she got high scores finally with the improvement about 20/120 on the subject of Math, and 10/100 on the subject of Physics.