Yuanhui Yang

Curriculum Vitæ

+1 (224) 999 - 2866
yuanhui.leslie.yang@gmail.com
www.linkedin.com/in/yuanhuiyang
github.com/yuanhui-yang
1501 Maple Ave Apt 504, Evanston IL 60201, USA

Education

Degree	**Master of Science**	2015.09 – 2016.12
Major	Computer Science	
Institution	Northwestern University (NU)	
Degree	**Bachelor of Science**	2009.09 – 2013.07
Major	Mechanical Engineering and Automation	
Institution	Shanghai Jiao Tong University (SJTU)	

Honor

Nov 2015	**Regional Silver Medalist** of *ACM-ICPC*, USA Association for Computing Machinery - International Collegiate Programming Contest 4th place out of 155 in Mid-Central USA
Apr 2013	**Meritorious Winner** of *ICM*, USA Interdisciplinary Contest in Modeling **The Champion of Shanghai**
Jul 2013	2×**Excellent Paper** of *10th OAPS*, SJTU
Jun 2012	**Excellent Paper** of *9th OAPS*, SJTU Outstanding Academic Papers by Students
Dec 2011	**National Second Prize** of *CUMCM*, PRC **Regional First Prize** of *CUMCM*, SH Contemporary Undergraduate Mathematical Contest in Modeling
Oct 2011	**Excellent Project Prize** of *SSPP*, SH Summer Social Practice Project

Publication

- Yuanhui Yang, Jingjuan Lu, Yixiang Shi, "The Study on Evolutive Model of Heavy Metal Pollution in Urban Surface Soil and Design of Time-Series Database," *Advanced Materials Research*, Aug. 2014.
- Lei Zhong, Yuanhui Yang, Junhao Li, "The Evaluation on Global Ecosystem Based on Wavelet Neural Network," in *10th Outstanding Academic Papers by Students*, Jul. 2013.
- Yuanhui Yang, Bingfei Cheng, Qin Zhou, "Genomic Signal Processing and Its Algorithm Based on Signal to Noise Ratio," in *10th Outstanding Academic Papers by Students*, Jul. 2013.

Thesis of Bachelor

- "*Modeling and High-bandwidth Control of Piezo-actuated Nano Positioning Stage*"
- Decreased *System Identification* error from −100% (*Least squares*) to ±15% by SVM (*Support Vector Machine*).
- Developed FOPI$^{\lambda}$D$^{\mu}$ (*Fractional-order Proportional-Integral*$^{\lambda}$-*Derivative*$^{\mu}$) controller by [1]*Advanced Oustaloup Filtering Algorithm* and [2]*Grünwald-Letnikov Derivative* respectively.
- Implemented *Genetic Algorithm* to tune FOPI$^{\lambda}$D$^{\mu}$ controller.

Project

- **Operating Systems** Sep 2016 – Dec 2016
  - Added `ps` syscall shell command to capture `Xv6` processes.
  - Shared a limited number of physical memory pages in `Xv6`.
  - Implemented threads as lightweight processes sharing their parent address space and thread-safe interfaces in `Xv6`.
  - Allowed `Xv6` file system to be tagged with key-value pairs.
- **Internet of Things** Mar 2016 – Jun 2016
  - Predicted short-term garbage amount by Linear-, RBF (*Radial Basis Function*)- and Sigmoid-SVM respectively in Python.
  - Sigmoid-SVM performed best in robust and accuracy comparing RBF- and Sigmoid-SVM both underfitting.
- **Concurrent Programming in Rust** Jan 2016 – Mar 2016
  - Implemented word frequency counter.
  - Implemented statistical spelling corrector.
  - Responsed shortest path graph routing query.
  - Developed concurrent HTTP/1.0 web server.
- **Introduction to Networking** Jan 2016 – Mar 2016
  - Implemented HTTP/1.0 Web Client and Server in C++.
  - Implemented TCP/IP Web Client and Server for The Minet TCP/IP Stack in C++.
  - Implemented and simulated distance-vector and link-state routing protocols in C++ respectively.
- **Finite Element Method** Aug 2014 – Dec 2014
  - Implemented Galerkin method by LU decomposition in C.
  - Solved 3D Maxwell's equations in steady state and transient electromagnetic field respectively.
- **Time Series Prediction** Apr 2013 – Jun 2013
  - Predicted daily natural gas sales amount by SVM in 20 days with ±15% error in MATLAB.
  - Implemented BPNN (*Backpropagation Neural Network*) to predict monthly natural gas sales amount in 12 months in MATLAB.
- **Signal Processing** Aug 2012 – Sep 2012
  - Derived general relationship between SNR (*Signal-to-Noise Ratio*) under *Voss mapping* and its general real $\mathscr{A}$ (*Affine Transformation*).
  - Derived SNR fast discrete $\mathscr{F}$ (*Fourier Transformation*) algorithm.

Skill

C++, C, Python, Rust, Go, MATLAB, MySQL, Linux, LaTeX, HTML