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Hao Men

Education

Ph.D, Stevens Institute of Technology, Hoboken, New Jersey, U.S.A, 2012.
Dissertation title "*Robotic Exploration for Mapping: Systems and Algorithms*"

MS, Beijing University of Technology, Beijing, China, 2006.

BS, Xi'an Jiaotong University (XJTU), Xi'an, China, 2003.

Professional Experiences

2014.08 – Present Senior Software Engineer
Bloomberg L.P., R & D

- Design, develop and maintain data model and core software for investor ownership functions, displayed in Bloomberg terminal. Scale out application to analyze and improve efficiency, scalability and stability of various parts of the system on a continuous basis.
- Profile ownership database, discover relationship between legacy databases and consolidate into internal relational database to improve efficiency and reduce cost.
- Lead technical and design meetings, work closely with product manager and sales force to play a vital role in influencing the nature and direction of the product, meet with clients/end users to understand requirements, demo the product and gauge feedback.

2013.10 – 2014.08 Software Engineer
Goldman Sachs, FICC Franchise Security Trading

- Develop and enhance risk and pricing trading application for fix income trading desks, including U.S/Euro Treasury Bonds trading, Inflation Bonds trading, Agency Bonds trading. Applications are developed with Java and Goldman proprietary programming language SLANG.
- Support government and agency trading desk for trading applications, including trade booking flow maintenance, data base synchronization between trading and sales, market data (Bloomberg, Tradeweb, Reuters etc) sanity check and data fusion.
- Mange Dynamic Computing (DC) private cloud for Fix Income Interest Rate Product (IRP) group in U. S. Monitor, maintain, upgrade and optimize DC system, assign/recycle virtual host based on each tech/quant team's request, dynamically generate cost to charge respective departments.

2011.08 – 2013.9 Software Engineer
UBS AG, CTO Office

- Discover/Profile internal database, extract logical models out from profiling results. Integrate logical model into unified domain with taxonomy management.
- Deployed unstructured data crawled with Apache Nutch Big Data distributed crawler, analyzed fetched financial articles with Apache Lucene OpenNLP natural language processing toolkit.
- Develop programs to clean/process structured/unstructured from Bloomberg credit risk, Capital IQ, Dbpedia, Crunchbase, Linkedin, factiva, BoardEx, Northernlight and Financial RSS feeds, extract company and person entities into global data integration.
- Reconcile entities based on Google Refine, search engine Attivio and LDIF for data integration, map ontology from Bloomberg, Captical, Dbpedia, OpenCalais etc. into UBS ontology, the reconciliation is completed on 40 node Hadoop Cluster in less than 3 hours for 3 million entities.
- Develop java programs to perform technical analysis of trading data on Marketcetera Emulator and Complex Event Processing Engine Esper.

2006.09 – 2011.07 Research Assistant
Stevens Institute of Technology, Design & Manufacturing Institute

- Developed algorithms and hardware controllers for 3D color model reconstruction in C/C++, design 3D point clouds merging and localization algorithms for robotic exploration and mapping. The C/C++ program was built on x86 linux OS and ARM linux box (Ubuntu).
- Designed and developed Remotely Operated Autonomously Mapping System (ROAMS), developed autonomous localization and exploration algorithm for this mapping robot,
- Designed electrical system for startup company CADEyes static 3D color mapping system, designed motor control PCB board and sensor PCB board for motor control (Microchip PIC18F4550) and position perception, developed motor control program on Microchip PIC18 controller for rotation. Designed CADEyes mobile mapping platform.
- Developed hub control program on ARM Cortex-A8 (Beagleboard), implemented adaptive close-loop position/speed control to synchronize with PIC 18 motor control board. Collected sensor information for

scanner position/orientation display from sensor board. Completed rough scanned point cloud rough alignment.

- Developed message encoding/decoding program on Freescale Wildfire 5282 for US ARMY remote weapon station communication board in US Army Research Laboratory in Picatinny NJ. Encoding positioning data, trigger data and operation feedback from remote side, send back and decode on operator side. Encode control command from operator, send and decode on remote side, distribute to different units on CAN bus (CAN 1.0 protocol).

Skills

4+ years experiences on C in embedded system, Linux and Windows environment.
4+ years experiences on C++, familiar with STL.
4+ years experiences on Python.
3+ years experiences on Java.
4+ years experiences on MATLAB.
1+ years experiences on Perl, Ruby and Go.

Familiar with Relational Database and SQL, Hadoop, Spark.
Familiar with cross platform programming, administration and operational management of enterprise application on Red Hat Enterprise Linux, Ubuntu, Debian, Solaris and Windows servers.
Familiar with Object Oriented Programming, necessary data structure and algorithms design approaches.
Hands on experiences with Perl, R, JavaScript, LabVIEW.
Expertise in Machine Learning algorithms design, data mining on large scale (Big Data) and Search Engine design on large scale and enterprise implementation.

Publications and Patents

1. B. Liu, J. Liu, **H. Men**, S. Mahadevan, Y. Ge, D. Kong, *Minimum Volume Multi-Task Learning*, Journal of Machine Learning Research, 2015, under review.
2. **H. Men**, K. Pochiraju, *Hue-assisted automatic registration of color point clouds*, , Journal of Computational Design and Engineering Volume 1, Number 4, October 2014, pages 223-232
3. **Hao Men**, Kishore Pochiraju, *Algorithms for 3D Map Registration,* Depth Map and 3D Imaging Applications: Algorithms and Technologies, IGI-Global, 2012.
4. **H. Men,** B. Gebre, K. Pochiraju, *Color Point Cloud Registration with 4D ICP Algorithm*, IEEE International Conference on Robotics and Automation, Shanghai, China, May 8-13, 2011.
5. **H. Men**, K. Pochiraju, *Hue Assisted Registration of 3D Point Clouds***,** ASME 2010 International Design Engineering Conferences & Computers and Information in Engineering Conference, Montreal, Quebec, Canada, August 15-18, 2010
6. **H. Men**, K. Pochiraju, *Color Assisted Iterative Closest Point (ICP) Algorithm***,** The 2nd International Conference on Computer and Automation Engineering, Singapore, Feb 26-28, 2010
7. B. Gebre, **H. Men**, K. Pochiraju, *Remotely Operated and Autonomous Mapping System (ROAMS),* 2009 IEEE International Conference on Technologies for Practical Robot Applications, Woburn, MA, Nov 9-10, 2009.
8. **H. Men**, K. Pochiraju, *Coupled Lateral and Lane Separation Control for 2-D Vehicle Groups*, ASME 2008 International Design Engineering Conferences & Computers and Information in Engineering Conference, New York City, U.S.A., 2008
9. **Men Hao**, Wu Liangsheng, Yang Qingkun. *Research and Development of High-speed Spindle Dynamic Balancing Controller Based on DSP*, China Mechanical Engineering, Vol 29, pp40-42, 2006
10. Yang Qingkun, Wu Liangsheng, **Men Hao**, Liu Zhenyu, *Application of Stepper Motor on High-speed Spindle Dynamic Balancing Device*, Manufacturing Automation, Vol28, pp65-67, 2006
11. Wu Liangsheng, Yang Jiahua, Wei Yuanqian, **Men Hao**, Yang Qingkun, Liu Zhenyu. *Inverse Eigenvalue Problems for a Structure with Linear Parameters*, Journal of Donghua University (English Edition), China, Vol. 22, No.1, pp. 116-119. 2005
12. Hu Mandong, Wei Yuanqian, Zhang Baozhu, **Men Hao**, Liu Zhenyu. *Development of Wood Powder Grinding Wheel*, Diamond & Abrasive Engineering, China, Serial. 146, No.2, pp. 25-28. 2005
13. Wei Yuanqian, Wang Ailing, Li Jianfeng, Wu Liangsheng, Wang Xinhua, **Men Hao**. *Study of Combined Mist-Jet Eco-Machining Fluids*, the 6th International Conference on Frontiers of Design and Manufacturing, Xi'an, China, June 21-23, 2004
14. Wei Yuanqian, Wang Xinhua, Wu Liangsheng, Wang Ailing, **Men Hao**, Hu Mandong. *Nano-Grinding with DLC Fiber Grinding Wheel,* the 6th International Conference on Frontiers of Design and Manufacturing, Xi'an, China, June 21-23, 2004
15. Wei Yuanqian, Wang Ailing, Zhu Xijing, Sun Xudong, Liu Zhongzhu, **Men Hao**. *Environmentally Benign Machining With Combined Mist-Jet Eco-Machining Fluids*, the Seventh International Conference on Progress of Machining Technology, Suzhou, China, December 8-11, 2004
16. Wei Yuanqian, Wang Xinhua, Wang Ailing, Wu Liangsheng, Li Jianfeng, **Men Hao**, Hu Mandong. *Discussion About Eco-Machining Fluid And Zero-Emission Production*, Diamond & Abrasive Engineering, China, Serial. 141, No.3, pp. 23-27. 2004

Patents:

1. K, Pochiraju, Biruk Gebre, **Hao Men,** Method and Apparatus for Adaptive Transmission of Sensor Data with Latency Controls, 2013, US 20130265919 A1
2. K.Pochiraju, **Hao Men**, Biruk Gebre, Adaptive Mechanism Control and Scanner Positioning for Improved Three Dimensional Laser Scanning, 2013, US 20130054187 A1

Academic Service, Awards & Media Reports

Reviewer for Journal of Computational Design and Engineering
Reviewer for Journal of Classification
Reviewer for IEEE International Conference on Robotics and Automation.
Reviewer for IEEE International Conference on Intelligent Robots and Systems
Reviewer for IEEE International Conference on Advanced Intelligent Mechatronics
Reviewer for IEEE Global Communications Conference

IEEE ICRA Travel Award, 2011

Media Reports:
MIT Technology Review: Making 3D Maps on the Move, by Kristina Grifantini, 2009
Engadget: 3D mapping drone fires lasers from a mile away, by Vlad Savov, 2009