Michael Weingert

Computer Scientist, Mechatronics Engineer, Mathematician

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Technical Skills

Artificial Intelligence: Machine learning, data science, Kinect, human computation, multi-agent systems, robotics

Mobile: iOS, Windows 8, Android, touch gestures, embedded web applications

Graphics: 3D rendering, computer vision, GPU programming, image processing, filtering, and transformations

Languages: C, C++, C#, Java, Objective-C, CSS, HTML(5), MySQL, JavaScript, OpenGL, OpenCL, GLSL

Work Experience

Facebook
Mobile Software Engineer
Menlo Park, CA
May 2014 – Present

- Created a new native application on iOS using the Facebook API and internal frameworks
- Responsible for designing, scoping, and developing the application from conception to completion

University of Waterloo
AI Research Assistant
Waterloo, ON
Jan 2013 – Jan 2014

- Researched machine learning, robotics, multiagent theory, human computation
- Prepared and presented research papers at HCOMP 2013 and Gamification 2013 on TrailView (see personal projects below)
- Created a vision-based assistive device for Alzheimer's patients using a Kinect

Microsoft
Kinect 2 R&D Engineer
Redmond, WA
May 2013 - Aug 2013

- Worked on machine learning with the Kinect 2 skeleton tracking pipeline
- Generated machine learning pipelines for analyzing large amounts of data
- Collaborated with first party game publishing partners to create solutions that are technically strong and improve user experience

Microsoft
Mobile Software Engineer
Redmond, WA
Sep 2012 - Dec 2012

- Created native applications for iOS and Windows 8 on Microsoft CRM team
- Constructed a communication and authentication framework between web-based code and native code
- Assumed responsibility as creator, sole developer, and tester of the apps

Sunnybrook Hospital
Data Visualization Engineer
Toronto, ON
Sep 2010 - Sep 2011

- Created a new application in C# to acquire and display frames of data from a 3D ICE catheter in real time
- Utilized OpenGL for image rendering, OpenCL, and GLSL for image processing
- Produced a low-level data pipeline to aid in real-time filtering

Personal Projects

TrailView
May 2013 - Current

- Creating mobile apps where users submit hiking photos to compete and earn rewards
- Aiming to recreate Google StreetView for hiking trails

HTML5 Fractals
April 2014 – May 2014

- Researched different methods of rendering fractals in HTML5/Javascript
- Created computational implementations of Julia Sets, the Mendelbrot Set, Iterated Function Systems, and Binary Fractal Trees

Chess AI
Feb 2012 – May 2012

- Utilized reinforcement learning and genetic algorithms to train an evaluation function
- Trained AI with over 4000 training games against itself and 6 games played against human volunteers at a design symposium (which the AI won)
- Developed a 3D application to interface with human players
- Increased search efficiency by alpha-beta pruning the minimax/decision tree and utilizing multithreading

Sudoku AI
Jan 2012 – Feb 2012

- Employed constrained and backtracking search algorithms to solve a Sudoku puzzle

Education

Stanford University
Sep 2014 – May 2016 (expected)

- **Master's in Computer Science**
- **Specialization:** Artificial Intelligence

University of Waterloo
Sep 2009 – May 2014

- **Major:** Mechatronics Engineering
- **Minors:** Pure Math, Computer Science
- **GPA:** 3.98 (out of 4.0)
- **Graduation Honours:** Dean's List with Distinction, Waterloo Engineering class of 2014 Valedictorian
- **Relevant Coursework:** Introduction to Artificial Intelligence, Operating Systems, Parallel and Concurrent Programming, Pattern Recognition

Awards

Academic Honours

- Valedictorian, Waterloo Engineering class of 2014 (2014)
- Sandford Fleming Foundation Undergraduate Travel Grant (2014)
- Dean's Honour List (2009-2014)
- President's Research Scholarship (twice: 2012, 2013)
- Gamification Design Finalist, Gamification 2013 (2013)
- Professor's Choice, Waterloo Student Design Competition (2012)
- President's Scholarship of Distinction (2009)
- 3rd Place Waterloo Engineering Competition Jr. Design Competition (2009)

Professional Honours

- Microsoft Hackathon Winner, Microsoft (2013)
- ThinkWeek Finalist, Microsoft (2013)
- NSERC Research Grant, Colibri Technology (2010)

Publications

- TrailView: Combining Gamification and Social Network Voting Mechanisms for Useful Data Collection (in the proceedings of HCOMP 2013)

Activities

Sports: Soccer, tennis, running, gym enthusiast

Volunteering: First year student mentor at University of Waterloo, orientation week leader

Exploring: Hiking, travelling, learning languages, trying new food

Consuming Media: Reading, romantic movies, television