

# Hao Yi Ong

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Education	<i>Stanford University</i> MS Mechanical Engineering (accelerated Coterminal program), 2014–2015      GPA 4.06 / 4.0 concentration in Optimization and Controls BS Mechanical Engineering/Computer Science with Distinction, 2011–2015      GPA 4.04 / 4.0 concentration in Artificial Intelligence
Coursework	Machine Learning (CS 229, A+), Algorithms (CS 161, A+), Stochastic Optimization (CS 238, A+), Convex Optimization (EE 364A/B, A/A), Distributed Algorithms and Optimization (CME 323, A), Linear Dynamical Systems (EE 263, A), Computer Organization and Systems (CS 107, A)
Experience	<p>Graduate Research Assistant, Stanford Intelligent Systems Lab – 2014–2015 Developed a distributed collision avoidance system as part of NASA Ames’s unmanned aircraft traffic management program (UTM). Applied several machine learning and stochastic optimization techniques and developed a novel algorithm for a large optimal control problem. Wrote 5k+ lines of algorithmic Scala to automate collision avoidance at scale. Implemented a traffic management server with Apache Spark and Kafka distributed computing frameworks. Best paper at the 34th IEEE/AIAA Digital Avionics Systems Conference out of 400 submissions.</p> <p>Graduate Research Assistant, Volkswagen Automotive Innovation Lab – 2014 Developed a decentralized model predictive control algorithm for self-driving cars. Applied convex optimization techniques to collision avoidance problem and simulated algorithm in Matlab and C. Best of session award at the 2015 IEEE American Control Conference.</p> <p>Manufacturing Intern, Tegu Toy Company – 2014 Designed and prototyped a portable electromagnetic sensor package to detect manufacturing defects in company’s flagship toy product. Developed the sensor package in Arduino.</p>
Computer Skills	<i>Proficient</i> Python, Scala, Apache Spark, Julia, Matlab, LaTeX <i>Experienced</i> C, C++, Java, CUDA, Apache Kafka, Arduino, Javascript
Awards	Frederick E. Terman Engineering Scholastic Award, Stanford University – 2015 Tau Beta Pi, Stanford University – 2014 Kairos Global Fellowship, Kairos Society – 2014 President’s Award for Academic Excellence – 2012
Selected publications	<b>H. Y. Ong</b> and M. J. Kochenderfer. <u>Short-term conflict resolution for unmanned aircraft traffic management</u> . <i>Proceedings of the 34th Digital Avionics Systems Conference (DASC)</i> , Sep. 2015. <b>H. Y. Ong</b> and J. C. Gerdes. <u>Cooperative collision avoidance via proximal message passing</u> . <i>Proceedings of the American Control Conference (ACC)</i> , Jul. 2015. <b>H. Y. Ong</b> , K. Chavez, and A. Hong. <u>Distributed deep Q-learning</u> . <i>Preprint</i> . <a href="http://arxiv.org/abs/1508.04186">http://arxiv.org/abs/1508.04186</a> .