Yoshua Alfredo Nava Chocrón

Curriculum Vitae

The heights by great men reached and kept
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward in the night.
-Henry Wadsworth Longfellow-.

Education

2014 **Summer practicum, Embedded systems**, *North Carolina State University*, Raleigh, 20/20.

2009–2015 **Informatics Engineer**, *Universidad Católica Andrés Bello (UCAB)*, Caracas, 15,5/20.

Thesis project: I worked with Luis Vicens, another student at UCAB, on the development of the electronics, state estimation algorithms, wireless communication, ground station software, and PID control algorithms for stabilizing a low-cost quadrotor platform around the hovering point with a minimal array of sensors. Our work received an Honorific Mention from UCAB.

Student organizations

1. UCAB ITF Taekwondo group. Obtained a silver medal at the 4th General Choi National Cup, in the GUP degrees category.
2. UCAB Robotics and Automation group (ROAUCAB). Served as the coordinator of the student branch from June 2013 to September 2014. Developed, with other members of the group, a line follower robot to participate in the Venezuelan National Robotics Competition CCSBOTS2013.
3. UCAB Educational Robotics Group. I worked on the implementation of a small set of Pinguino control boards, developed a user manual to build and program the boards. implemented a set of light and touch sensors to be used with the boards, and produced a video tutorial to describe the boards construction process.

Honors and awards

1. Engineering Dean's list during the March-July semester of 2010.
2. Academic excellence recognition award. 2011-2012 academic year.

Experience

Work/Research

2010-present **Informatics assistant**, *Funeraria San Pedro C.A.*, Caracas.
Enterprise computer systems installation, setup and troubleshooting.

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2014 **Intern**, *Mechatronics Research and Development Group at Universidad Simón Bolívar*, Caracas.
Analysis of the state of the art in the field of visual odometry was performed, based on which the Semi-Direct Visual Odometry Robot Operating System package was selected to be implemented, tested and documented for the purpose of using it in an Autonomous Underwater Vehicle (AUV) in the near future.

Teaching

2012–2014 **Teaching assistant**, *Universidad Católica Andrés Bello*, Caracas.
Teaching assistant of the subject "Calculus I for engineering" during five consecutive semesters. Worked with groups of approximately 20 students two times a week, and prepared exercises, motivational activities and evaluations.

Interests

Control theory — Optimal control and motion planning.

Computer vision — SLAM and visual odometry.

Nonlinear systems — Analytical and computational methods to study nonlinear systems behavior.

Embedded systems — Implementation of computer vision and optimal control algorithms on embedded platforms. Development of ROS packages for real-time trajectory optimization and model-predictive-control.

Complementary courses

Massive Open Online Courses (MOOC's)

- **Underactuated robotics**, offered by the MIT at edX, in the fall of 2014. Main topics of the course were: nonlinear systems analysis, applied optimal and robust control and motion planning. Obtained Honor Code Certificate with a grade of 83/100.
- **Autonomous Navigation for Flying Robots**, offered by the Technical University of Munich at edX, during the spring of 2014. Course resolved around quadrotors autonomous navigation, divided in the following topics: 3D geometry and sensors, linear control, probabilistic state estimation, Kalman filters, visual odometry, and visual SLAM and 3D reconstruction. Obtained Honor Code Certificate, with a grade of 100/100.
- **Control of Mobile Robots**, offered by the Georgia Institute of Technology at Coursera, during the spring of 2014. Main topics of the course were: basic mobile robots models, linear systems, control systems design, hybrid systems and navigation. Obtained Statement of Accomplishment with Distinction, with a grade of 100/100.

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- **Everything is the same: modeling engineered systems**, offered by Northwestern University, during the spring of 2014. Main topics of the course were: linear systems, mechanical systems, chemical diffusion, linear electrical circuits, and analogies between physical systems. Obtained Statement of Accomplishment, with a grade of 98/100.

Presential

- **2.0 Research**, offered by the Engineering Research and Development Center at Universidad Católica Andrés Bello. February 2014.

Conferences

2014 **XII Conference on Telecommunications Engineering** *UCAB-UNEFA.*

2013 **XXXIX Latinoamerican Conference in Informatics.** *CLEI*

2010-2013 **III, IV, V and VI Intercollegiate Conferences in Computer Science.** *JOINCIC*

Languages

Spanish **Native proficiency.**

English **Full professional proficiency.**

German **Elementary proficiency.** *CERF A1.1 course completed*

References

- Available upon request

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