

## BENJAMIN L. OCHOA

University of California, San Diego  
Computer Science and Engineering  
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### Education

UNIVERSITY OF CALIFORNIA, SAN DIEGO La Jolla, CA  
September 1993–March 2007

B.S., Electrical Engineering, minor in Music, 1999  
Depth: Visual Computing  
Advisors: Ramesh Jain and Pamela Cosman

M.S., Electrical Engineering, 2003

Ph.D., Electrical Engineering, 2007

Dissertation: *Precise Estimation of the Geoposition and Orientation of Ground-level Video Cameras from Multiple Sensors*

Advisors: Serge Belongie and Nuno Vasconcelos

### Experience

UNIVERSITY OF CALIFORNIA, SAN DIEGO La Jolla, CA  
January 2014–present  
Lecturer, Department of Computer Science and Engineering

KBR (formerly CENTAURI, INTEGRITY APPLICATIONS INCORPORATED (IAI)) Carlsbad, CA  
August 2013–present  
Sr. Technical Director, Government Solutions

2d3 (was part of OXFORD METRICS; acquired by BOEING) La Jolla, CA  
April 2008–August 2013  
Vice President, Research and Development

UNIVERSITY OF CALIFORNIA, SAN DIEGO La Jolla, CA  
April 2008–December 2008, September 2009–September 2012  
Visiting Scholar, Department of Computer Science and Engineering

VISION ROBOTICS San Diego, CA  
January 2007–April 2008  
Chief Engineer, Research and Development

SONARAY (now IOS TECHNOLOGIES; acquired by GLIDEWELL LABORATORIES) San Diego, CA  
August 2006–January 2007  
Chief Engineer, Research and Development

INDEPENDENT CONSULTANT San Diego, CA  
2001–present  
Technology consultant in the areas of computer vision and photogrammetry

BAE SYSTEMS San Diego, CA  
June 2000–August 2006  
Senior Engineering Specialist, Technical Manager, Project Manager, and Functional Manager  
Photogrammetry Research Group

UNIVERSITY OF CALIFORNIA, SAN DIEGO  
September 1999–March 2007

La Jolla, CA

Graduate Student

Computer Vision Laboratory, March 2002–March 2007

Computer Vision and Robotics Research Laboratory, September 1999–March 2002

SCRIPPS INSTITUTION OF OCEANOGRAPHY

La Jolla, CA

June 1996–June 2000

Research and Development Engineer

Underwater Imaging Research Group

## Teaching

UNIVERSITY OF CALIFORNIA, SAN DIEGO

Undergraduate Courses

CSE 8B *Introduction to Programming and Computational Problem Solving - 2*, 2020, 2021, 2022  
(spring and fall)

CSE 15L *Software Tools and Techniques Laboratory*, 2019 (winter and spring), 2021

CSE 101 *Design and Analysis of Algorithms*, 2018

CSE 152 *Introduction to Computer Vision*, 2015, 2016, 2017, 2018

CSE 152A *Introduction to Computer Vision* (broad introduction), 2021

CSE 166 *Image Processing*, 2016, 2017, 2019, 2020 (spring and fall), 2022

CSE 167 *Computer Graphics*, 2018, 2020

Graduate Courses

CSE 252A *Computer Vision I* (comprehensive introduction), 2014, 2015, 2016, 2019, 2021, 2022

CSE 252B *Computer Vision II* (imaging geometry), 2014, 2015, 2016, 2017, 2018, 2019, 2020,  
2021, 2022

CSE 252C *Selected Topics in Vision and Learning*, 2017, 2018

CSE 273 *Computational Photography*, 2020 (as CSE 291), 2021 (as CSE 291), 2022

## Board Memberships

GANTZ-MOUNTAIN INTELLIGENCE AUTOMATION SYSTEMS, INC.

Carmel Valley, CA

November 2014–present

Member, Strategic Advisory Board

## Awards and Honors

KBR Senior Technical Fellow, 2022.

Centauri (now KBR) Technical Fellow, 2019.

BAE Systems Chairman's Gold Award, 2004. *BAE Systems' highest award for technical achievement worldwide.*

## Press Coverage

"Hispanic Grads Find Success," *Diversity/Careers in Engineering & Information Technology*, Summer/Fall 2003.

## Professional/Academic Activities

Faculty Representative, UC San Diego Office of Student Conduct, 2022–present

Diversity, Equity, and Inclusion (DEI): San Diego County Educational Technology Fair, 2003, 2004, 2005, 2006; Educational High Technology Symposium, 2003, 2004, 2005; UCSD Building the Community Engineering Symposium, 2004; UCSD Engineering Transfer Prep, 2018; California Forum

for Diversity in Graduate Education, 2020; Duke University Cultural Competence in Computing (3C) Fellow, 2021.

Reviewer: International Conference on Computer Vision, IEEE Conference on Computer Vision and Pattern Recognition, IEEE Winter Conference on Applications of Computer Vision.

Senior Member, The Institute of Electrical and Electronics Engineers (IEEE).

### **Film/Television**

Executive Producer, "Ewok Hunt" - Short Film, 2022.

Contributor, "Computer Vision: Fact & Fiction" - Educational DVD, 2005.

### **Invited Talks**

AIE Full Motion Video Symposium, *Keynote Address*, "Standards-Enabled Full Motion Video Exploitation Capabilities," November 2012.

AIE Full Motion Video Symposium, *Keynote Address*, "Standards-Enabled Full Motion Video Exploitation Capabilities," June 2012.

UCSD Building the Community Engineering Symposium, "Thinking like an Engineer," October 2004.

SHPE San Diego Chapter, "Structure and Motion from Video," November 2003.

SPIE Airborne Reconnaissance, Classified Meeting, "Real-time Mosaic Construction from Video," July 2001.

### **Publications**

B. Ochoa and S. Belongie, "Covariance Propagation for Guided Matching," Workshop on Statistical Methods in Multi-Image and Video Processing 2006.

J.R. Powell, S. Krotosky, B. Ochoa, D. Checkley, and P. Cosman, "Detection and Identification of Sardine Eggs at Sea Using a Machine Vision System," *Proceedings of the MTS/IEEE OCEANS*, 2003.

K.D. Moore, J.S. Jaffe, and B.L. Ochoa, "Development of a New Underwater Bathymetric Laser Imaging System: L-Bath," *Journal of Atmospheric and Oceanic Technology*, 17(8):1106–1117, August 2000.

P.P. Dang, B.L. Ochoa, and P.M. Chau, "Performance Analysis of Image Transmission Over Wireless Channels," *Proceedings of the SPIE Image and Video Communications and Processing*, 2000, pp. 908–916.

J.S. Jaffe, K.D. Moore, D. Zawada, B.L. Ochoa, and E. Zege, "Underwater Optical Imaging: New Hardware & Software," *Sea Technology*, 39(7):70–74, July 1998.

D.G. Zawada, J.S. Jaffe, A.M. Chekalyuk, and B.L. Ochoa, "Multispectral measurements of fluorescent biological pigments," AGU/ASLO Ocean Sciences Meeting 1998.

K.D. Moore, J. Jaffe, R. Currier, and B. Ochoa, "A new bathymetric laser imaging system," AGU/ASLO Ocean Sciences Meeting 1998.

**Patents**

B. Hitchcock, V.T. Nusso, R.M. Pardridge, K.A. Abeloe, and B.L. Ochoa, "Stereoscopic viewer,"  
Patent US 9992487, June 5, 2018.

*Last update: September 12, 2022*