

Don Brutzman, Ph.D., LCDR USN (Ret.)

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Don Brutzman is a computer scientist and Associate Professor of Applied Science working in the Modeling Virtual Environments Simulation (MOVES) Institute, Undersea Warfare Academic Group, and Information Sciences Department at the Naval Postgraduate School (NPS) in Monterey California. He graduated with a B.S.E.E. from the U.S. Naval Academy (USNA) in 1978 and was awarded Ph.D. in Computer Science from NPS in 1994. He chairs the Extensible 3D (X3D) Graphics Working Group for the non-profit Web3D Consortium. As a participant in International Standards Organization (ISO) activities, he is ISO/IEC JTC1 SC24 Working Group 4 Convenor for Computer Graphics. He serves as Web3D Consortium liaison to the World Wide Web Consortium (W3C) and contributor in Metaverse Standards Forum (MSF). Building on the open X3D International Standard, group efforts are working to make 3D printing and 3D scanning compatible with CAD, modeling, simulation and the Web. X3D is also the basis for the Web-based SPIDERS3D visualization system by NAVFAC which is available across Navy and Marine Corps networks. He is lead architect on the X3D-Edit authoring tool which has over 17,000 recorded users, combining multiple X3D capabilities that are used to maintain over 4,000 open-source 3D model examples. He is lead author of the book X3D Graphics for Web Authors, published April 2007 by Morgan Kaufmann.

Don is a retired naval submarine officer who qualified as nuclear engineer and served in a variety of engineering and operational tours. He is principal investigator for the Network-Optional Warfare (NOW) project exploring fleet stealth using efficient messaging, optical signaling, semantic coherence, Data-Centric Security (DCS), Data Strategy for Autonomous Systems, and human-supervised Ethical Control of Unmanned Systems. Current work includes Navy-wide distributed visualization and X3D Virtual Sand Table (VST). He teaches courses in Autonomous Systems, Command and Control (C2), and Live Virtual Constructive (LVC) distributed interactive simulation. He has successfully supervised over a hundred thesis and doctoral students. He received the VADM Charles B. Martell - David Bushnell Award from National Defense Industrial Association (NDIA) Undersea Warfare Division in 2021. His research interests include underwater robotics, real-time 3D computer graphics, artificial intelligence, and distributed networking for large-scale virtual environments.

Current outreach activities:

- Submarine Birthday Ball, Naval Submarine League (NSL) Northern California Chapter, 20 April 2024
- Maritime Risk Symposium MRS2024, co-chair, held at Naval Postgraduate School 10-13 June 2024