

## **Curriculum Vitae**

**Christian A. Yates, P.E.**

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Mechanical Engineer with over 20 years of experience in accident reconstruction and forensic engineering, specializing in collisions with vehicles, tractor-trailers, pedestrians, motorcycles, and bicycles. His background includes analysis of electronic module downloads for both automobile airbag control modules and tractor-trailer electronic control modules. Mr. Yates also has experience with occupant kinematics, seat belts, and product failure analysis.

### **EDUCATION**

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- 1999**                      **Master of Science, Mechanical Engineering**  
Specialization: Dynamics and Robotics  
University of Florida, Gainesville, FL
- 1995**                      **Bachelor of Mechanical Engineering, with Honors**  
Specialization: Dynamic Systems  
Georgia Institute of Technology, Atlanta, GA

### **PROFESSIONAL EXPERIENCE**

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- 2019 to present**            **Quality Forensic Engineering, LLC, Tallahassee, FL**  
Senior Engineer
- 1998 to 2019**            **BEC Consulting, LLC, Tallahassee, FL**  
Principal – 2015 to 2019  
Senior Engineer – 2007 to 2019
- BEC Industries, LLC, Tallahassee, FL**  
Director of Engineering – 2015 to 2019  
Senior Engineer – 2007 to 2015
- Benedict Engineering Company, Tallahassee, FL**  
Engineer – 1998 to 2007
- 1996 to 1998**            **University of Florida, Gainesville, FL**  
Teaching Assistantship – 1997 to 1998  
Research Assistantship – 1996 to 1997
- 1992 to 1996**            **Benedict Engineering Company, Inc., Tallahassee, FL**  
Staff Engineer – 1996  
Engineering Intern 2 – 1995  
Engineering Intern 1 – 1994  
Technician 1 – 1992 to 1993

## LICENSES, REGISTRATIONS, & CERTIFICATIONS

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No. 58819	State of Florida, P.E.
No. 18936	State of Georgia, E.I.T. Certified Counter Balanced Forklift Operator
No. 4431670	FAA Remote Pilot

## PROFESSIONAL ASSOCIATIONS

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- Florida Engineering Society (FES)
- National Society of Professional Engineers (NSPE)
- American Society of Mechanical Engineers (ASME)
- National Association of Professional Accident Reconstruction Specialists (NAPARS)
- Society of Automotive Engineers (SAE)
- National Safety Council #658753

## RELEVANT COURSEWORK/CONTINUING EDUCATION

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April 2021	“Operator Safety Training – Sit-down Counter Balance Forklifts” Ring Power Lift Trucks, Orlando, FL
February 2021	“Pedestrian Safety” PDH Library, Jacksonville, FL
February 2021	“Work Zone Traffic Control” PDH Library, Jacksonville, FL
April 2020	“Vehicle Forensics Essentials Series” Berla, Jacksonville, FL
April 2020	“Bendix Air Brake Training” Bendix On-Line Brake School, Jacksonville, FL
February 2019	“Roundabouts III: Geometric, Landscape, and Traffic Design” PDH Library, Jacksonville, FL
February 2019	“Solar Energy Fundamentals” PDH Library, Jacksonville, FL
April 2018	“Operator Safety Training – Sit-down Counter Balance Forklifts” Ring Power Lift Trucks, Jacksonville, FL
February 2017	“Roadway Traffic Controls and Traffic Signs” PDH Library, Jacksonville, FL

- February 2017 “Future Trends in Engineering: Rail and Manufacturing”  
National Society of Professional Engineers, Jacksonville, FL
- April 2015 “Operator Safety Training – Sit-down Counter Balance Forklifts”  
Ring Power Lift Trucks, Tallahassee, FL
- November 2013 “Florida’s New Expert Opinion Evidence Standard”  
Florida Workers’ Compensation Institute, Tallahassee, FL
- October 2013 “Accessing and Interpreting Heavy Vehicle Event Data Recorders”  
SAE International, Oxnard, CA
- July 2011 “ARAS 360 3D Computer Diagramming for Crash Reconstruction”  
ARAS 360 Technologies Inc., Tallahassee, FL
- June 2011 “Safe Operation of Powered Industrial Truck”  
BEC Consulting, Tallahassee, FL
- March 2008 “Traffic Accident Reconstruction”  
Northwestern University Center for Public Safety, Tallahassee, FL
- June 2005 “Fork Lift Operator Training”  
Tallahassee, FL
- April 2005 “PC Crash 6.2”  
MacInnis Engineering Associates Ltd, Tallahassee, FL
- April 2004 “Analysis of Collisions Involving Pedestrians or Bicyclists”  
Collision Safety Institute, Tallahassee, FL
- September 2003 “Crash Data Retrieval System Operator”  
Collision Safety Institute, Inc., Tallahassee, FL
- August 2002 “General Industry Outreach Training”  
Benedict Engineering Company, Tallahassee, FL
- March 2000 “Advanced Commercial Vehicle Inspection and Collision Investigation”  
Texas A&M University, Tallahassee FL
- March 2000 “Commercial Vehicle Inspection and Collision Investigation”  
Texas A&M University, Tallahassee, FL
- June 1999 “Traffic Accident Reconstruction”  
Northwestern University Traffic Institute, Tallahassee, FL

## **PUBLICATIONS**

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Yates, Christian A. "Design of a Three-Fingered Gripper with the Capability of Manipulation of an Object." Master's thesis, University of Florida, 1999.

Yates, Christian A. and K. D. Reisinger. "Optimization of Design of a Three-Fingered Gripper with Capability of Manipulating an Object." Paper presented to the ASME International Mechanical Engineering Congress & Exposition, 1998.

## **PRESENTATIONS**

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Yates, Christian A. "Technology and Accident Reconstruction." Quality Forensic Engineering, LLC, Tallahassee, FL, April 2021.

Yates, Christian A. "Tractor Trailer Inspection 101." Quality Forensic Engineering, LLC, Tallahassee, FL, July 23, 2020.

Yates, Christian A. "Berla iVe Overview." Quality Forensic Engineering, LLC, Tallahassee, FL, July 23, 2020.

Yates, Christian A. "Fundamentals of CDR Downloads." Quality Forensic Engineering, LLC, Tallahassee, FL, February 5, 2020.

Yates, Christian A. "ACM Repowering Rig and the CDR900." Quality Forensic Engineering, LLC, Tallahassee, FL, February 5, 2020.

Yates, Christian A. "Field Work Safety Procedures." Quality Forensic Engineering, LLC, Tallahassee, FL, February 5, 2020.

Yates, Christian A. "Accident Reconstruction and Trucking Technologies." National Interstate Trucking Super Summit, St. Augustine, FL, May 16, 2016.

Yates, Christian A. "All Data Energy Methods, Restraint Systems and Black Boxes." BEC Consulting, LLC, July 30, 2007.

Yates, Christian A. "ACTAR Training." Benedict Engineering Company, March 2004.

Yates, Christian A. "CDR Black Box Training." Benedict Engineering Company, September 23, 2003.

Yates, Christian A. "Airbag Black Boxes." Benedict Engineering Company, March 9, 2001.

Yates, Christian A. "Accident Prevention Signs." FAMU-FSU School of Engineering, February 2000.

## **PATENTS**

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Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, Scott K. Bladen, Richard Lackinger, James R. Dobbs, et al. "Port Storage and Distribution System for International Shipping Containers" Malaysia Patent No. MY-159425-A, filed March 2, 2007 and issued January 13, 2017.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, Rebecca Jeppson Bladen, Richard E. Lackinger, James R. Dobbs, et al. "Automated Automotive Vehicle Parking/Storage System" Chinese Patent No. 2011800491332, filed August 11, 2011 and issued August 17, 2016.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, Richard E. Lackinger, et al. "Overhead Vehicle Storage System" Chinese Patent No. ZL2007800354790, filed May 3, 2007 and issued November 25, 2015.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, Richard E. Lackinger, et al., "Port Storage and Distribution System for International Shipping Containers" Hong Kong Patent No. HK1144185, filed March 2, 2007 and issued February 6, 2015.

Benedict, Charles E., Scott K. Bladen, Brian G. Pfeifer, et al., "Port Storage and Distribution System for International Shipping Containers." European Patent No. 2,146,894, filed March 02, 2007 and issued June 25, 2014.

Benedict, Charles E., Scott K. Bladen, Brian G. Pfeifer, et al., "Port Storage and Distribution System for International Shipping Containers." Chinese Patent No. 2007800519399, filed March 02, 2007 and issued June 04, 2014.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, James R. Dobbs, Scott K. Bladen, and Richard E. Lackinger "Automated Automotive Vehicle Parking/Storage System" U.S. Patent No. 8,734,078, filed August 12, 2010 and issued May 27, 2014.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, James R. Dobbs, Scott K. Bladen, and Richard E. Lackinger "Warehouse Storage System" U.S. Patent No. 8,651,790, filed May 02, 2007 and issued February 18, 2014.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, Scott K. Bladen, et al, "Material Handling and Storage/Warehouse System" U.S. Patent No. 8,628,289, filed August 12, 2010 and issued January 14, 2014.

Benedict, Charles E., Christian A. Yates, Brian G. Pfeifer, et al, "Automated Shipboard X-Y Track Material Handling and Storage Method" U.S. Patent No. 8,408,863, filed April 26, 2010 and issued April 2, 2013.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. "Overhead Vehicle Storage

System.” Korean Patent No. 10-1189876, filed April 7, 2009, and issued October 04, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Warehouse Storage System.” Australian Patent No. 2007300406, filed May 2, 2007, and issued July 19, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Vehicle Storage System.” Australian Patent No. 2007300407, filed May 02, 2007, and issued July 19, 2012.

Benedict, Charles E., Christian A. Yates, Brian G. Pfeifer, et al., “Port Storage and Distribution System for International Shipping Containers.” U.S. Patent No. 8,206,074, filed July 9, 2010 and issued June 26, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Boat Storage System.” Korean Patent No. 10-1158168, filed April 27, 2009 and issued June 03, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al., “Port Storage & Distribution System for International Shipping Containers.” Singaporean Patent No. 154968, filed March 02, 2007 and issued May 15, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Boat Storage System.” Canadian Patent No. 2,664,191, filed May 3, 2007 and issued January 10, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Vehicle Storage System.” Canadian Patent No. 2,664,184, filed May 3, 2007 and issued January 3, 2012.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Warehouse Storage System.” Singaporean Patent No. 151383, filed May 3, 2007 and issued November 15, 2011.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Boat Storage System.” Singaporean Patent No. 151422, filed May 3, 2007 and issued November 15, 2011.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Vehicle Storage System.” Singaporean Patent No. 150963, filed May 3, 2007 and issued October 14, 2011.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Overhead Boat Storage System.” Chinese Patent No. 2007/800354146, filed May 3, 2007 and issued October 12, 2011.

Benedict, Charles E., Scott K. Bladen, James R. Dobbs, et al. “Warehouse Storage System.” Korean Patent No. 10-1063683, filed April 27, 2009, and issued September 01, 2011.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, James R. Dobbs, and Scott K. Bladen. “Automated Material Handling System with Load Transfer Vehicles.” U.S. Patent No.

7,931,431 B2, filed September 5, 2006 and issued April 26, 2011.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, James R. Dobbs, Scott K. Bladen, and Richard E. Lackinger. "Overhead Vehicle Storage System" U.S. Patent No. 7,909,558 B2, filed May 2, 2007 and issued March 22, 2011.

Benedict, Charles E., Christian A. Yates, James R. Dobbs, et al. "Overhead Boat Storage System." US Patent No. 7,850,412 B2, filed May 2, 2007 and issued December 14, 2010

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, James R. Dobbs, Scott K. Bladen, and Richard E. Lackinger. "Port Storage and Distribution System for International Shipping Containers." U.S. Patent No. 7,753,637, filed March 1, 2007 and issued July 13, 2010.

Benedict, Charles E., Christian A. Yates, James R. Dobbs, et al. "Port Storage & Distribution System for International Shipping Containers." U.S. Patent No. 8,206,074, filed July 9, 2010 and issued June 26, 2012.

Benedict, Charles E., Brian G. Pfeifer, Christian A. Yates, Scott K. Bladen. "Automated Shipboard Material Handling and Storage System." U.S. Patent 7,708,514, filed March 31, 2004 and issued May 4, 2010.

Benedict; Charles E., Dobbs, James R., Yates, Christian A., Ponder, Perry L. "Adjustable Porous Structures and Method for Shoreline and Land Mass Reclamation." Mexican Patent No. 251,009, filed April 09, 2002, and issued October 30, 2007.

Benedict; Charles E., Dobbs, James R., Yates, Christian A., Ponder, Perry L. "Adjustable Porous Structures and Method for Shoreline and Land Mass Reclamation." European Patent No. 1,383,964, filed April 09, 2002, and issued October 17, 2007.

Benedict, Charles E., Stephen R. Corbett, Christian A. Yates, et al. "Safety Guard for Band Saws." U.S. Patent 6,857,347, filed March 18, 2003 and issued February 22, 2005.

Benedict, Charles E., James R. Dobbs, Christian A. Yates, et al. "Adjustable Porous Structures and Method for Shoreline and Land Mass Reclamation." U.S. Patent 6,722,817, filed November 18, 2002 and issued April 20, 2004.

Booeshaghi, Farhad, Charles E. Benedict, Stephen R. Corbett, Christian A. Yates, et al. "Pivotal Guards for Power Hand Tools with Rotating Discs." U.S. Patent 6,699,114, filed April 26, 2002 and issued March 2, 2004.

Benedict; Charles E, James R. Dobbs, Christian A. Yates, and Perry L. Ponder. "Adjustable Porous Structures and Method for Shoreline and Land Mass Reclamation." U.S. Patent 6,481,926 B2, filed April 9, 2001 and issued November 19, 2002.

## **REPRESENTATIVE PROJECTS**

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### **Material Handling**

Mr. Yates served as a lead engineer involved with the design, fabrication and testing of a multi-directional material handling system that was funded by the Military Sealift Command, a system that was capable of automatically storing and retrieving 20-foot ISO containers on board a ship. The system was designed to operate while the ships were at sea so that certain containers would be able to be selectively discharged as needed. This system was subsequently developed for additional land-based uses to store large scale items or containers.

A pallet moving material handling system was also developed and funded for use on aircraft carriers through the Small Business Innovative Research program. This system was design to automatically move material during an underway replenishment operation to minimize the disruption to the aircraft carrier operation. Mr. Yates served as a lead engineer in the design and fabrication of the system, and was in charge of the testing of the system both on land and at-sea.

### **Forensic Engineering**

Mr. Yates has been responsible for a variety of forensic engineering project types, including the following representative subjects:

- Vehicular accident reconstruction
- Tractor-trailer accident reconstruction
- Engineering Data Recorder downloads
- Motorcycle, Bicycle & Pedestrian accidents
- Restraint system analysis
- Evaluation of mechanical designs and failures