

# Alpha Engineering & Consulting, LLC

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## CURRICULUM VITAE OF CHRISTIAN A. YATES, P.E.

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## BACKGROUND

Mr. Yates is a Mechanical Engineering Expert with over 20 years of experience investigating thousands of cases related to a variety of engineering issues. He specializes in accident reconstruction cases involving autos, tractor-trailers, bicycles, pedestrians, and other roadway related incidents. His expertise also includes seat belt analysis, occupant kinematics, product failure analysis, and electronic module downloads for both automobile airbag modules and tractor-trailer electronic control modules.

In addition to providing documentation, analysis, reports, and deposition and trial testimony in forensic matters, Mr. Yates has been involved in the design of various products including safety guards for grinders and band saws, port container handling systems, vehicle and boat storage systems, warehouse material handling systems, and material handling systems for shipboard use.

## EDUCATION

- |      |   |
|------|---|
| 1999 | Master of Science, Mechanical Engineering<br>University of Florida, Gainesville, FL<br>Specialization: Dynamics and Robotics      |
| 1995 | Bachelor of Mechanical Engineering,<br>Georgia Institute of Technology, Atlanta, GA<br>Specialization: Dynamic Systems and Design |

## PROFESSIONAL EXPERIENCE

- |                |  |
|----------------|--|
| 2022 – Present | Alpha Engineering & Consulting, LLC, Jacksonville, FL  |
| 2019 – 2022    | Quality Forensic Engineering, LLC, Jacksonville, FL<br>2019 to 2022 Senior Engineer            |
| 2007 – 2019    | BEC Consulting, LLC, Tallahassee, FL<br>2015 to 2019 Principal<br>2007 to 2019 Senior Engineer |

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

## PROFESSIONAL LICENSES & CERTIFICATIONS

- Licensed Professional Engineer, Florida, #58819
- Certified Counter Balanced Forklift Operator
- FAA Remote Pilot, #4431670

## PROFESSIONAL ASSOCIATIONS

- 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 (NSC) #2465107

## AREAS OF EXPERTISE

- Automobile Collisions
- Tractor / Trailer Collisions
- Bicycle Accidents
- Motorcycle Accidents
- Pedestrian Accidents
- Occupant Kinematics
- Automobile Black Box Download / Analysis

- Tractor Trailer Electronic Control Module Download / Analysis
- Product Failure Analysis
- Restraint System Analysis
- Trip and falls

## NOTABLE PROJECTS

### 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 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 designed 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 testing the system, both on land and at sea.

### Forensic Engineering

Mr. Yates has been responsible for a variety of forensic engineering projects, including the following:

- Vehicular accident reconstruction
- Tractor-trailer accident reconstruction
- Engineering data recorder downloads
- Motorcycle, bicycle and pedestrian accidents
- Restraint system analysis
- Mechanical design and failure evaluation
- Product design and product failure analysis and testing
- Vehicle dynamics
- Traffic signal sequence evaluation

## COURSEWORK/CONTINUING EDUCATION

- |               |   |
|---------------|---|
| December 2025 | “Beyond the Last Precrash Speed Value”, NAPARS, Jacksonville, FL                |
| October 2025  | “Virtual Crash Live Classroom Training Course”, VCrash Academy, Gainesville, FL |
| February 2025 | “Intersection Safety”, PDH Library, Jacksonville, FL                            |

- July 2024 "Zero to Hero in Cloud Compare", ai2-3D, Jacksonville, FL
- June 2024 "Toyota Safety Systems", NAPARS, Jacksonville, FL
- March 2024 "Hyundai-Kia EDR Tool & Tesla EDR Tool Operator/Technician", Kent E. Boots & Associates, Jacksonville, FL
- September 2023 "Motorcycle Collision Reconstruction", Lightpoint Learning, Jacksonville, FL
- September 2023 "Update on Heavy Vehicle Event Data Recorders", NAPARS, Jacksonville, FL
- September 2023 "Commercial Vehicle ADAS: Evolution, Performance Testing and Applications", NAPARS, Jacksonville, FL
- June 2023 "Recon-3D", ai2-3d, Jacksonville, FL
- April 2023 WREX World Reconstruction Exposition, Orlando, FL  
"Commercial Vehicle Collision Mitigation Systems"  
"Accident Reconstruction and Advanced Driver Assistance Systems (ADAS)"  
"What's New with General Motors Event Data Recorders (EDRs)"  
"Toyota Safety Sense (TSS) Testing and Research of VCH, PCS-O and PCS-I"  
"Heavy Vehicle Event Data Recorder (EDR) Update"  
"Injury Biomechanics and the Accident Reconstructionist"  
"The Importance of Tires in Accident Investigation"  
"Recon-3D - Mobile Lidar in Collision Reconstruction"  
"Methods for Establishing Motorcycle Impact Speed"  
"Nighttime Recognition and Visibility"
- February 2023 "EDR Update with Andrew Rich", NAPARS, Jacksonville, FL
- February 2023 "Maintenance of Traffic Plans", PDH Library, Jacksonville, FL
- February 2023 "Signalization Design", PDH Library, Jacksonville, FL
- May 2022 "Fundamental Techniques of Crash Investigation", Institute of Police Technology and Management – University of North Florida, Jacksonville, FL
- Roadway Evidence
  - Safety Belt Examinations
  - Tire Examination – Tire and Wheel Forensics
  - Vehicle Lamp Examinations in Traffic Collisions
  - Case Preparation and Courtroom Presentation
- February 2022 "Safety Belt Examinations", Institute of Police Technology and Management – University of North Florida, Jacksonville, FL

October 2021	"Photogrammetry Techniques and Methods II", Quality Forensic Engineering, LLC, Tallahassee, FL
July 2021	"Photogrammetry Techniques and Methods I", Quality Forensic Engineering, LLC, Tallahassee, FL
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

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

Yates, Christian A., "Fieldwork Safety", Quality Forensic Engineering, LLC, Tallahassee, FL, May 3, 2022

Yates, Christian A., "Technology and Accident Reconstruction", Florida Bar CLE#2009648N, 2021-2022

Yates, Christian A., "Download and Analysis Techniques for Hyundai and Kia Vehicles", Quality Forensic Engineering, LLC, Tallahassee, FL, December 1, 2021

Yates, Christian A., "Engine Control Modules & Downloads", Quality Forensic Engineering, LLC, Tallahassee, FL, December 1, 2021

Yates, Christian A., "Fieldwork Safety", Quality Forensic Engineering, LLC, Tallahassee, FL, July 7, 2021

Yates, Christian A., "Toyota Techstream Download Capabilities", Quality Forensic Engineering, LLC, Tallahassee, FL, December, 10, 2020

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., "Fieldwork Safety", 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., "Alldata 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

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

*December 2025*