Corbin Heist

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Profile

- Dual USA and UK National
- Proven Motorsport professional, Experience in Prototype, Open Wheel, and GT racing categories.
- Strong analytical skills using MATLAB, Excel, and Data Visualisation Software to identify performance trends using approaches derived from Data Science and Statistics.
- Data Analysis and Processing using most Analysis Packages: MOTEC, PI/Cosworth, BOSCH, bespoke tools in Python, MATLAB, and Excel.
- Strong understanding of Vehicle Dynamics and Simulation techniques and packages.

Professional Experience

Software Engineer : HH Development Limited

January 2019 - May 2019

- Motorsport Data Management Software Development
- Software Engineering Workflows
- Customer Support and Liason
- Small Team, Remote work

Assistant Race Engineer: Meyer Shank Racing

November 2017 - November 2018

- Full Time Position with Extensive travel for Tests & Race Events
- IndyCar and IMSA (NSX GT3) Sportscar Championships
- Manage and Develop control systems strategies and configuration
- Work Closely with Race Engineer to assess and analyse Vehicle Performance
- Develop Library of Key Performance Indicators
- Validate and analyse large datasets, Develop data lake and pipeline for data from Timing Provider, Onboard Data Logging, Online Resources.
- Conduct Exploratory and Deep Dive Data Analysis using Python and Bosch WinDarab Suite
- Realtime Race Strategy, Tactics, and Analysis Including:
    - Tyre Degradation & Performance
    - Fuel Strategy
- Data Acquisition and Systems Engineer for 2019 NSX GT3 Evo Testing and Development (Seconded to Honda Performance Development)

Control Systems and Performance Engineer: Freelance Engineer

December 2015 - October 2017

- Support Lead Race Engineer with Data Analysis using Data Visualisation and KPI Reporting
- Liase with Engineers on Setup Options, Data Analysis/ Reports, and Event Strategy
- Responsible for: Realtime Race Strategy, Tactics, and Analysis.
- Responsible for Fuel Mileage and Drive-Time strategies.
- Report on and Analyse Key Performance Indicators, Onboard Performance and Reliability Data
- Debrief Drivers and support driver development with Data and Simulator work

Performance:

- Produce Pre-Event Report, Race-Simulations
- Track, Develop, and Analyse Key Performance Indicators
- Competitor and Strategy Analysis using bespoke and commercial strategy tools

Control Systems:

- Calibrate and Maintain onboard control systems, sensors, and data logging equipment
- Prepare, calibrate, and validate additional sensors for dedicated testing.
- Setup and Maintain Electronic Control System Configuration and Datasets, and Team Setup and Data – Databases

Other Responsibilities:

- Network Administration and Develop Systems to manage large datasets
- Setup, Maintain, and Improve Electrical, Network, and Data/Telemetry Systems
- Manage and Maintain Engineering Office Hardware and Software packages

Client Summary

Teams	Cars	Championships
Audi Sport ISR	Audi R8 GT3	Blancpain GT
Tockwith Motorsport	Ligier JSP217 LMP2	European Le Mans Series + Le Mans 24h + Selected World Endurance Championship Rounds
Gruppe M Racing	Mercedes AMG GT3	Blancpain GT Asia
Private F3 Testing	Euroformula F3	Euroformula
Greaves Motorsport	Ligier JSP2 LMP2	European Le Mans Series + Le Mans 24h

Junior Performance Engineer: Greaves Motosport

June 2015 – January 2016

- Develop metrics to measure Driver and Car performance.
- Data Analysis using PI Toolbox
- Development of Race Strategy and Engineering tools.
- Driver Development through Data Analysis

Greaves 3D Engineering Engineer (Summer Placement)

June 2015- September 2015

- Develop existing products to improve manufacturing processes and reduce costs
- Conceptualise and Develop concepts for new products for consumer and bespoke applications

Junior Tyre Technician: Rebellion Racing

June 2015 - 24H Le Mans

- Liase with Michelin Service Engineers for tyre fitting and quality control
- Assist Tyre Technicians with garage build, setup, and tyre management
- *Additional Role: 2013 12H Sebring – Refuelling Team (Fireman)

Data and Mechanic: BMW Club Racing

2011-2013

- Support of mechanical and data systems.
- Driver and Car Development using AIM Race Studio

Junior Mechanic and Track Support: Korman Autoworks

2009- 2013

- Vintage BMW Restoration and Engine Build and Trackside Customer Support
- Component Sub-Assembly

Additional Motorsport and Engineering Qualifications

MIA Winter School of Race Engineering Oxford, UK December 2012

- A course designed to bridge the gap between formal education and work in the motorsport industry. Taught by engineers currently working in LMP1 and World Series by Renault.

Optimum G Applied Vehicle Dynamics Birmingham, UK January 2017

- A vehicle dynamics course, focusing on the application and understanding of the aspects of vehicle dynamics fundamental to Motorsport.

Optimum G Data Driven Performance Engineering Birmingham, UK January 2017

- Building on Applied Vehicle Dynamics, this Seminar covers the methodologies and use of data, and how to efficiently utilise that data to make rapid engineering and data-driven decisions to improve the performance of a vehicle.
- P1 in Optimum Lap Championship, a laptime simulation competition between attendees of the seminar. Each competitor was given a budget to spend on Aerodynamic, Engine, Tyre, and Chassis development, and Optimum lap was used to simulate the field.

Other Work Experience

Blue Force Technology Composite Manufacturing Apprentice

2012-2013

Education

BEng (Hons) Motorsport Engineering - Oxford Brookes University

Oxford, United Kingdom (September 2013- December 2017)

Unique Projects

"Stability and Control Analysis of a LMP2 Sportscar Prototype"

- Final Year Dissertation-Project, in cooperation with Greaves Motorsport.
- Develop a MATLAB toolset for Yaw-Moment Analysis- to identify Key Performance Indicators for Stability, Control, and Performance of an LMP2 Sportscar.
- Utilise Key Performance Indicators to investigate the sensitivity of vehicle setup changes to Stability, Control, and Performance.
- Further Develop a methodology for tracking and correlating vehicle setup to vehicle performance and driver comments

"Design Study: LMP2 Coupe Front Suspension"

- Working with Gibson Technology- Responsible for conceptual design and analysis of an LMP2 front suspension.
- Used MATLAB based tools and OptimumK to achieve target key performance indicators.

"Vehicle Performance Analysis using MATLAB"

- Created MATLAB steady state laptime simulation
- Created MATLAB based tool and GUI for exploring Load Transfer Effects
- Used Lapsim and Cornering Models to objectively evaluate vehicle configurations.
- Created Virtual 4 post rig simulation using linear state space model, validated using OBR 4 post rig data, and Developed Key Performance Indicators to drive damping optimisation tools.

Associates of Science (Motorsport Technology) - Forsyth Technical Community College

Winston-Salem, North Carolina USA (September 2011- May 2013) – 3.3 GPA

Associates of Science (Motorsport Technology): Forsyth Technical Community College

August 2011-May 2013 **(3.5 GPA)**

Winston Salem, North Carolina, USA

Technical Skills

- (Expert) Data Acquisition, Telemetry, and Data Analysis (PI Toolbox, MOTEC, MATLAB, Bespoke Tools)
- (Expert) Motorsport Control Systems and Configuration (MOTEC, PI Toolset, Bosch)
- (Advanced) Motorsport Strategy, Tactics, and Analysis Tool Development
- (Advanced) Vehicle Dynamics and Simulation
- (Advanced) Network Administration, Computer Setup/Build, General Technology Fluency
- (Advanced-Beginner) Git
- Technical Reporting
- Engineering and Project Management

Personal Interests

- Mountaineering & Climbing
- Photography
- Hiking, Camping, Backcountry Adventures
- High Performance Computing, Data Science/Engineering, and Technology Innovation
- Free and Open Source (FOSS) Technology

References

References Available upon request