

DAVID W. WEBER

10187 Colonial Industrial Drive ♦ South Lyon, MI 48178 ♦ www.greywolfinnovations.com

248.895.6935 Cell ♦ 248.446.9569 Office ♦ david.weber@greywolfinnovations.com

———— <mailto:david.weber@greywolfinnovations.com> **ENGINEERING PROFILE** ————

Design ~ Simulation ~ Analysis ~ Manufacture

Business-minded, multiple discipline engineer with over twenty years of proven innovation.

A full technical career of developing systems from concept through production phases. Products have ranged from small consumer components to elaborate stability slip control systems and life support systems. A proven record of establishing relationships with clients on new product development, consistently meet objectives.

AREAS OF EXPERTISE AND TECHNICAL SKILLS

- ◆ Business management operations: financials, marketing, sales,
- ◆ Project development / management, micro- and macro-levels
- ◆ System design, from whiteboard to validated production end product
- ◆ Controls system design and embedded system architecture
- ◆ Safety-critical vehicle dynamics software systems
- ◆ Stability, traction and brake slip control systems
- ◆ Algorithm development and simulation
- ◆ High performance driving skills (GM and Ford Lic.)
- ◆ Safety-critical life support control systems
- ◆ Underwater and altitude rebreather systems
- ◆ Mechanical systems design CAD
- ◆ FEA and CFD

ANSIC, MSVC++, CodeWrite, CodeWarrior, Paradigm, Netburner, CANalyzer, CANape, Matlab, Simulink, MatrixX SysBuild, DAdisp, dSpace, CarSim, Working Model, Cosmos Motion (Adams), CD-adapco CCM+, CFDesign, Cosmos Advance Professional, SolidWorks, VX CAD/CAM, AutoCAD, Rhino3d, CorelDraw&S Multidata, dSpace, PhaseX, Outlook, Word, Excel, PowerPoint, Project, Frontpage

PROFESSIONAL EXPERIENCE

GREY WOLF INNOVATIONS, INC. - South Lyon, Michigan

Client based engineering consulting firm

CEO, Chief Engineer - 2005-Present

CEO: Currently managing all aspects of business operations: In this capacity created and conducted instructional seminars and demonstrations for new technologies. Cultivated new client development and facilitated direct sales of consulting services. Also provided oversight of purchasing, marketing, sales and accounting.

Chief Engineer: Controlling / managing projects with internal and external clients and coordinating internal product development. Consulting to various clients on systems ranging from simple parts for life support systems and paintball marking systems to elaborate electro-mechanical systems modeling of hybrid engine concepts.

- Consulting Services: Mechanical Systems Design: CAD, Mechanical Simulation: FEA & CFD, Flow Thermal and Stress Analysis, Controls Development and Simulation: Model Based Design and Hand Coding, Prototyping: In-house and Oversee Outsourced Products and Final Assembly.
- Development Cowl Induction and Air-box system for use on NASCAR program: Extensive CAD design coupled with Computational Fluid Dynamics (CFD) studies, Mixed phase Air and Fuel CFD studies. Full system verification with dynamometer testing. Currently racing, increases performance by over 10hp.
- Development of a Closed-Circuit Underwater Rebreather System for Diving Industry: Systems Design with Full Simulation Validation Prior to First Prototype. Software creation and prototype debug. Quad Redundant sensors, fully redundant controllers with failsafe user monitor. (Near Beta test).
- Development of an Altitude Rebreather System under SBIR contract of USAF: Fully Designed and Prototyped. Replaces existing walk around oxygen supply system and provides 2 hours of gas supply. Enhancement of the war fighter to allow one system to replace 3 existing systems. (Patent Pending)

TRW AUTOMOTIVE INC. - Livonia Michigan

Automotive Slip Control Products

Independent Consultant - 2000-2005 **Principal Engineer** - 1998-2000

New Technology Development Embedded Slip Control Systems. 90% of all systems I conceived found their way into production. The development process was controlled by target specifications and verification. Matlab Simulink simulation was used extensively to insure core robustness prior to "coding to target". There were zero defects and no warranty claims on any of the systems created. If you're driving a GM, Ford or Chrysler with stability control, chances are high you're driving my control systems and code. From Whiteboard to Production!

- Delta Pressure Controller: Fully proportional pressure controller/actuation system. Allows full Vehicle Stability Control (VSC) functionality without a pressure transducer. This results in a cost savings of approximately \$10 per unit sold. (Production Targeted) (Patented)
- Hydraulic Brake Assist / Panic Brake Assist/ Hydraulic Brake Boost: Systems allow for panic braking assist by fully proportional boosting brake pressure at the wheel ends above driver braking. Brake boost system learns the vacuum booster Run-Out point, and use hydraulic control unit to boost brake pressure. Created elaborate Self-Learning-Algorithms. (Production)
- Vehicle Speed Reference and Surface Estimation Systems: Mu and longitudinal acceleration models are based on engine drive, brake torque and aerodynamic forces. Overall system estimates true vehicle speed during all vehicle states of deceleration, acceleration and cornering. (Production)
- Four Brake Channel Moment and Force Distribution System and Wheel Slip Regulation: These systems control the distributed braking forces to control overall vehicle stability and correct oversteer and understeer. These systems also regulate deep wheel slip under all vehicle states. (Production)
- Maneuver Assist and Hill Decent Control: Developed fully integrated wheel speed controller that mated brakes and engine control for very low speed vehicle control. (Patent Pending)

ROBERT BOSCH CORPORATION - Farmington Hills, Michigan

Automotive Slip Control Products

Applications Engineer - 1996-1998

Primary objectives were project management for implant customer (Toyota). Responsibilities were split between vehicle dynamics vehicle testing and software performance calibration of ABS and VDC (Vehicle Dynamics Control). Group leader responsible for meeting project deadlines to Toyota.

- Instructor to new hires for practices of software application to vehicles.
- Vehicle testing and software calibration (Winter and Summer Testing).
- MY00 Toyota Avalon project. Group leader. MY98-99 Toyota Camry project. Group leader.
- Designed and developed application tools to aid in calibration of control system on vehicles.

M.P. HOLCOMB ENGINEERING INC. - Rochester Hills, Michigan

Accident reconstruction, Product liability (Defense)

Analysis Engineer - 1991-1996

Focus was on technical case support and accident reconstruction of various cases involved in litigation. Responsibilities split between supporting lead expert witnesses and developing materials for personal cases.

- Personal Expert witness court testifying and deposition was an integral part of this position.
- Cases required inspection of the vehicles and accident sites and directing survey teams.
- Computerized photogrammetry, crash simulation, CAD prepared court exhibits.

PROFESSIONAL DEVELOPMENT

Lawrence Technological University, Southfield Michigan Bachelor of Science in Mechanical Engineering (Systems Concentration)	1991
Northwestern University Traffic Institute, Evanston Illinois Traffic Accident Reconstruction	1991