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Tony Gioutsos

- **Started the first Automobile Algorithm company in 1992. Most of the vehicles in the world contain the cutting-edge crash sensing algorithm concepts developed by Mr Gioutsos to deploy airbags. He dramatically changed the industry in simulation as well, since it was not available at the time.**
- **Even though sales has been his focus for the last 10 years, Mr Gioutsos has remained on the cutting edge of ADAS and AV. He had effectively steered the industry in correct procedures for design and testing of algorithms and systems.**
  - Director for over 32 years of advanced automotive safety groups
  - Automotive Safety expert in sensing, electronics, algorithms, airbags, ADAS and AVs
  - Signal processing expert especially in regards to sensor data for automotive application
  - System level understanding of Airbags and ADAS
  - Vast experience in presentation and people skills; hands-on marketing and sales via technical ability and customer interaction; leader of several technical teams and departments
  - Legal expert, detailed IP experience

EXPERIENCE

April 2013 – Jan 2023 *Siemens AG (also TASS International)* *Livonia, Mi*

Director Portfolio Development Autonomous Americas

- Have worked with countless OEMs and Tiers on active and passive safety systems including sensing, algorithms and system design
- Very familiar with all aspects of ADAS and AV systems
- Developed Safety metrics and measures for ADAS and AV performance (e.g. written a paper "Measuring the Performance of Active Safety Algorithms and Systems")
- Understand algorithms used for ADAS and AV sensor data
- Detailed understanding of Radar, Camera, IMU, LIDAR, V2X and Ultrasonic sensors
- Long time user of Neural Networks
- Deep MADYMO understanding
- Was the driving force behind the American Center for Mobility project (worked with many types of interested parties including : SPARK, MEDC, Construction companies, State authorities, NHTSA, DOT, MDOT, etc.)
- Worked with the University of Michigan on the Mcity project
- Ability to take the products and find ways to sell, coordinate, jointly work with, etc. to make the products even more profitable
- Extremely knowledgeable on active safety, passive safety, connected vehicles, etc. as well as personnel throughout the industry
- Have written many papers on Active safety/connected vehicles to help sell the products (also presented at over 200 conferences)
- Full financial P&L and all other decision making responsibilities for Americas office (similar to President) > $3M sales
- Run the Americas office for Dutch owned company in the automobile industry
- Responsible for all leased simulation software sales and marketing (MADYMO (passive safety simulation), PreScan (active safety simulation), Delft-Tyre)
- Responsible for generating engineering projects/consultancy
- Responsible for sales and marketing Dutch facilities in the Americas (Crash test facility, Connected car research highway, Homologations, battery testing facility, etc.)
- Responsible for sales and marketing of Dutch Engineering projects with Americas Clientele (e.g. ACM design)

- Work with a who's who in the auto industry: OEM's, Tiers, Academia, Military, Off-road

Jan 2005 – April 2013 *The Craig White Group* *Grosse Pointe, Mi*

Co-Owner/Executive Engineer

- Consultancy Company on various aspects of the automotive safety industry
- Worked on Airbag Systems
- Worked on Interior Cabin Monitoring Sensor Systems
- Worked on Blood Alcohol Level Detection Sensor Systems
- Worked on Healthcare Technology Sensor Systems
- Worked on Gaming industry Sensor Systems
- Advanced Algorithm Design and Leadership

Jan 2005 – April 2013 *TG Consulting* *Farmington Hills, Mi*

Expert Witness

- Expert witness for the automotive safety industry
- Representing OEMs and Tiers
- Several Passive Safety Cases
- Intellectual l Property Cases (patent violations)
- Patent Usefulness analysis
- Detailed Report Writing

Nov 1996 – Jan 2005 *Breed Technologies/Key Safety* *Sterling Heights, Mi*

General Manager – Electronics R&D

- Directed 20 senior level technical people in advanced safety electronics from concept to manufacturing using advanced algorithm design skills and leadership qualities as a backbone
- System level Passive and Active Safety design including areas like radar, crash severity detection, simulation, cameras, low-risk deployment, inflator control algorithms, dual stage inflation
- P&L responsibility, marketing and sales responsibility as well as technical prowess
- Proposal writing and B2B sales throughout the world

Nov 1992 – Nov 1996 *Artistic Analytical Methods (A^2M)* *Farmington Hills, Mi*

Owner/Executive Engineer

- The first Automotive Algorithm company
- Funded by Delco Electronics Contract (via Chris Caruso)
- Crash Detection Algorithm design
- Engine algorithm design (e.g. misfire detection)
- Sold to Breed Technologies

Oct 1990 – Dec 1994 Automotive Systems Lab (ASL – Takata owned) Farmington Hills, Mi

Director Electronics R&D

- Directed 10 technical people in advanced safety electronics from concept to manufacturing using advanced algorithm design skills and leadership qualities as a backbone
- First real person with signal processing background in the automotive industry
- Competed against 18 companies in crash detection algorithms and won all contests easily
- Understanding of crashes and accelerometer waveforms in deep detail correlated to the physics of a crash
- Worked with many types of algorithm approaches including: Fuzzy logic, rank-order filtering, Fourier transforms, Walsh transforms, slant transforms, information theory concepts, digital filtering, neural networks, ARMA, analog interfaces, DSP, microcomputer (8 bit only!) algorithms, etc
- Simulation approaches to crash waveform variation for Monte Carlo and DOE
- Introduction of Receiver Operating Characteristic (ROC) curves into automotive industry for measuring the performance of ANY algorithm (e.g. All ADAS detection algorithms like AEB)

Oct 1985 – Oct 1990 ERIM Ann Arbor, Mi

Senior Engineer

- University of Michigan Owned R&D facility on advanced Radar Research
- Top-secret clearance
- Advanced radar imaging algorithms
- System Level Radar Design
- Cutting edge signal processing algorithm design
- Monte Carlo approaches
- Data Compression approaches

May 1983 – Oct 1985 Capital Institute of Technology Gaithersburg, Md

Teacher

- Taught courses in signal processing and communication theory

May 1983 – Oct 1985 Fairchild Communications and Electronics Germantown, Md

Engineer

- Worked on various aspects of Satellite systems
- Voice Recognition
- Phase Locked Loops
- Information theory aspects for source and channel coding
- 1 of 12 Fairchild Scholars

EDUCATION

The University of Michigan

BSEE(83), MSEE(87)

- Specializing in Communication theory, Information theory and Signal Processing
- Magna Cum Laude
- Master's Thesis – Tree Searched Vector Quantization

OTHER

- Awarded over 20 patents and published/presented over 200 technical papers.
- Avid golfer. Lifelong Competitive athlete – born leader.
- Award winning writer of Feature Movie Script – *"The Christians – Earth's Cry Heaven's Smile".* Much of this script is based on Mr. Gioutsos' autobiography and has been awarded many awards at movie festivals.
- Knowledge and use of the following signal processing/communication theory/information theory techniques: detection and estimation theory, time-frequency analysis, wavelet theory, cyclostationary processes, neural networks, filtering (linear and non-linear), rank-order filtering, wiener filtering, kalman filtering, spectral analysis, walsh-hadamaar transforms, homomorphic techniques, stochastic/noise modeling, fuzzy logic, data fusion, time warping, signal energy estimation, predictive modeling, entropy techniques, machine learning, matched filtering, etc.
- Also functional modeling of product and/or environment (including sensitivity) to produce a better more cost effective final product (cost function) via Monte Carlo techniques and other modeling approaches which correlated to the physics of the problem and would improve "due care" testing for the product (verification and validation)
- Cutting edge simulation techniques and understanding
- Safety Metrics (cost functions) deep understanding
- Ingrained with "Due Care" principles
- Some Selected Papers and patents
  - Papers
    - 2022 - Key Features in Radar Simulation for ADAS/AV
    - 2021 - Searching for Critical Scenarios and Maximizing Sensor Design Using Simulation of ADAS/AV Systems
    - 2020 - Autonomous Vehicle Effects on Seating
    - 2018 – A History of Algorithms in the Automobile Industry
    - 2014 – Measuring the performance of Active Safety Algorithms and Systems
    - 2002 – Important Issues in Crash Severity Sensing
    - 1994 – The use of Signal Processing Techniques in an Occupant Detection System
    - 1993 – Tradeoffs and Testing for Frontal Crash Sensing Systems
  - Patents
    - 2006 – Vehicle Occupant Safety System
    - 2003 – Variable Time Venting Algorithm
    - 1999 – Crash Detection System
    - 1996 - Method for discriminating long-period, low-velocity crashes
    - 1996 - Predictor/check crash discriminator
    - 1994 - Vehicle crash simulator system for testing crash sensors