Internship offer – Sensor simulator

Founded in 2003, InvenSense Inc., a TDK Group Company, is the world's leading provider of MEMS sensor platforms. InvenSense's vision of Sensing Everything™ targets the consumer electronics and industrial markets with integrated Motion and Sound solutions. Our solutions combine MEMS (micro electrical mechanical systems) sensors, such as accelerometers, gyroscopes, compasses, and microphones with proprietary algorithms and firmware that intelligently process, synthesize, and calibrate the output of sensors, maximizing performance and accuracy. InvenSense's motion tracking, audio and location platforms, and services can be found in many of the world's largest and most iconic brands including smartphones, tablets, wearables, drones, gaming devices, internet of things, automotive products, and remote controls for smart TVs.

InvenSense is headquartered in San Jose, CA and has offices in Boston, China, Taiwan, Korea, Japan, France, Canada, Slovakia, and Italy. We're looking for top-notch students to join our global intern team. If you're interested in being a part of our journey and helping us grow to become the leading provider of SoC platform solutions, we definitely want to hear from you.

We are looking for motivated students to join our 2023 Summer Intern Program! Our intern program includes real work assignments, Intern Appreciation Day (interacting with CEO and VPs), Networking Lunch with hiring managers, technical talks, New Hire Panel with recent grads, play with technology, off-site fun events, and more!

Overview/Job Summary

You will join our small and friendly SW team, located in Grenoble city.

- ➢ As part of the algorithm motion team and in collaboration with the Tools team, the intern will participate to create a simulator tool to generate IMU data (Accelerometer / Gyrometer) from a set of specifications including:
    - o Input of the tool would be sequence of position / orientation of one object
        - ▪ Input will be defined as TDK usual characterization sequences
    - o Simulator will simulate a database of IMU sensor:
        - ▪ Output should be compliant with existing data format
        - ▪ with noise / gain / offset variation according to datasheet of TDK sensors
        - ▪ additionnal vibrations due to external environment
        - ▪ variation of position relative to object center
    - o The quality of the delivery will be ensured by the comparison of the simulated IMU vs real data

TDK – InvenSense
MEMS Sensor Business Group
Sensor System Business Group
22 Avenue du Doyen Louis Weil
38000 GRENOBLE
+33 438 211 931
www.invensense.com

Job Description
- ➤ **Tasks:**
    - o Learning phase: get familiar with TDK IMU sensors
    - o Specifications phase: create a specification document and determine planning of actions to be able to have a concrete delivery at the end of the internship
    - o Implementation of selected features: Matlab based with compatibility with GUI interface
    - o Validation tool: implementation of test and checking with real data

Qualifications
- ➤ **List of hard and soft skills.**
    - o Programming in Python and Matlab – is mandatory
    - o Experience in GUI is a plus
    - o Understanding Signal processing – Sensor - is a plus
    - o Ability to read and understand datasheet document
    - o Pugnacity and creativity

Duration:
- ➤ 6 months

Location:
- ➤ Grenoble

Contact:
- ➤ Thank you to send your curriculum vitae via email and cover letter to Florence Gris – Algorithm motion team lead – florence.gris@tdk.com

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