



G.U.A.R.D

GOTHENBURG UNOFFICIAL ASSISTIVE RESPONSE DEVICE

JUSTINAS STIRBYS

BOYAN DAI

JOACIM EBERLÉN

ERIK LAURIN

SHAUN McMURRAY

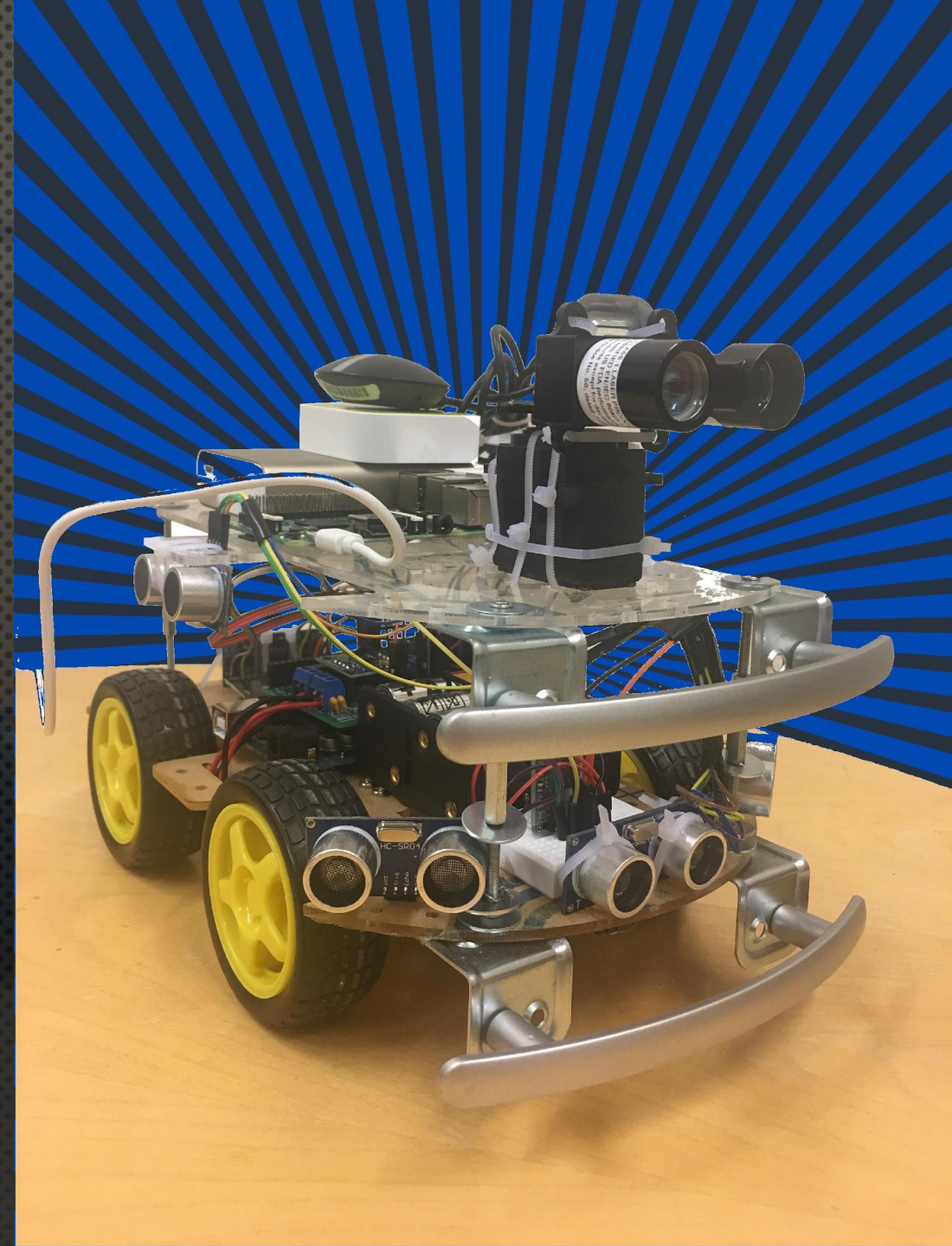
GABRIEL BULAI

MAIN GOAL

- FOLLOWING A 'TRAVELER'

FEATURES

- MOBILE APPLICATION
 - MANUAL CONTROL
 - AUTONOMOUS*
- CAMERA SUPPORT (VIDEO STREAM)
- COLLISION PREVENTION
- OBSTACLE AVOIDANCE
- GPS FOLLOWING*



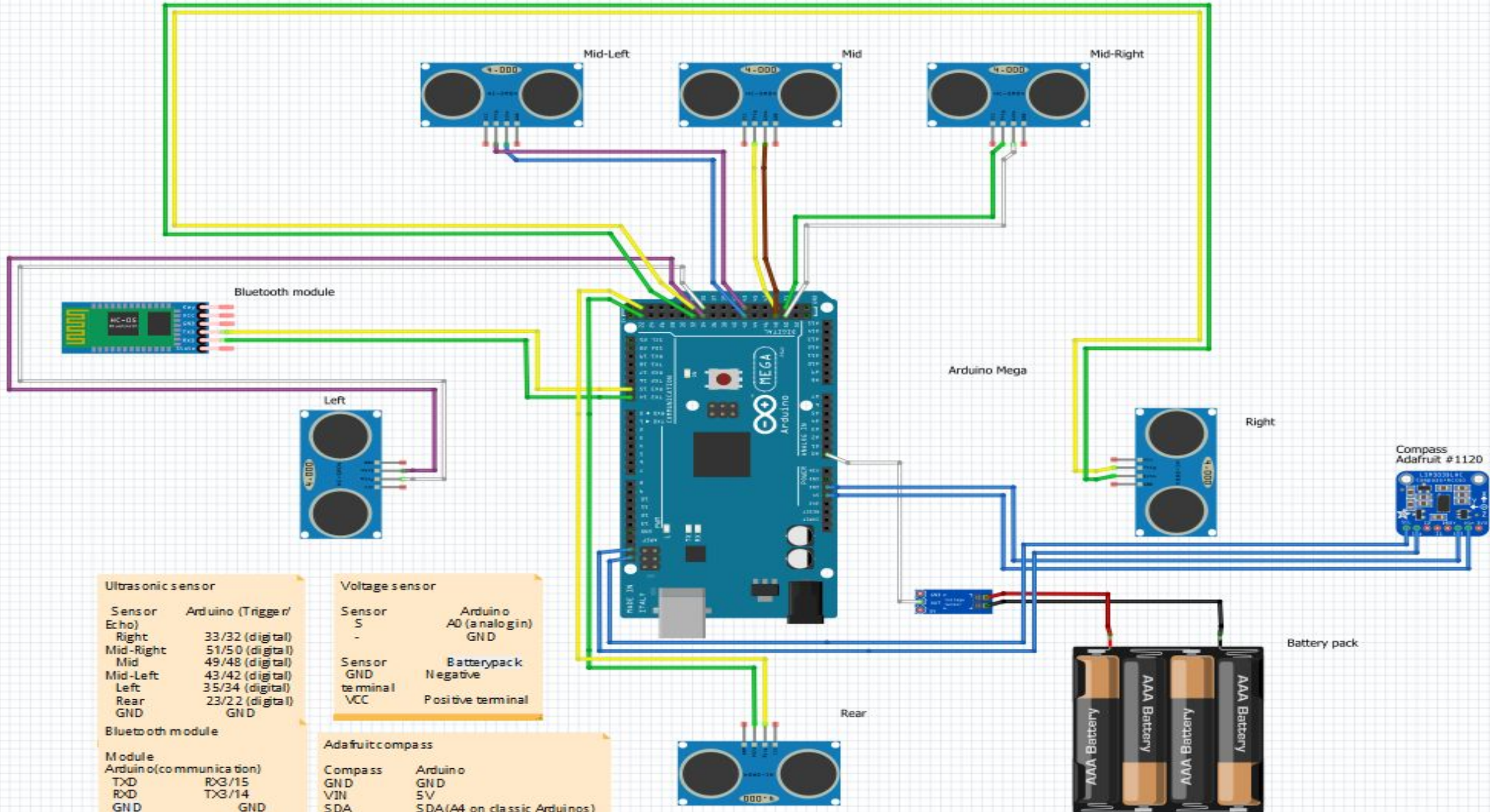
System and Software Architecture

SCHEMATIC

- ORGANIZED COMPONENTS CONNECTIONS
- COLOR-CODED WIRING

CLASS DIAGRAM

- LACK OF ARCHITECTURAL SKILLS
- TRYING TO DIVIDE ARCHITECTURE IN LAYERS



Ultrasonic sensor	
Sensor	Arduino (Trigger/Echo)
Right	33/32 (digital)
Mid-Right	51/50 (digital)
Mid	49/48 (digital)
Mid-Left	43/42 (digital)
Left	35/34 (digital)
Rear	23/22 (digital)
GND	GND

Bluetooth module	
Module	Arduino (communication)
TxD	RX/15
RxD	TX/14
GND	GND
VCC	5V

Voltage sensor	
Sensor	Arduino A0 (analog in)
S	GND
GND	Batterypack Negative
terminal	Positive terminal
VCC	

Adafruit compass	
Compass	Arduino
GND	GND
VIN	5V
SDA	SDA (A4 on classic Arduinos)
SCL	SCL (A5 on classic Arduinos)

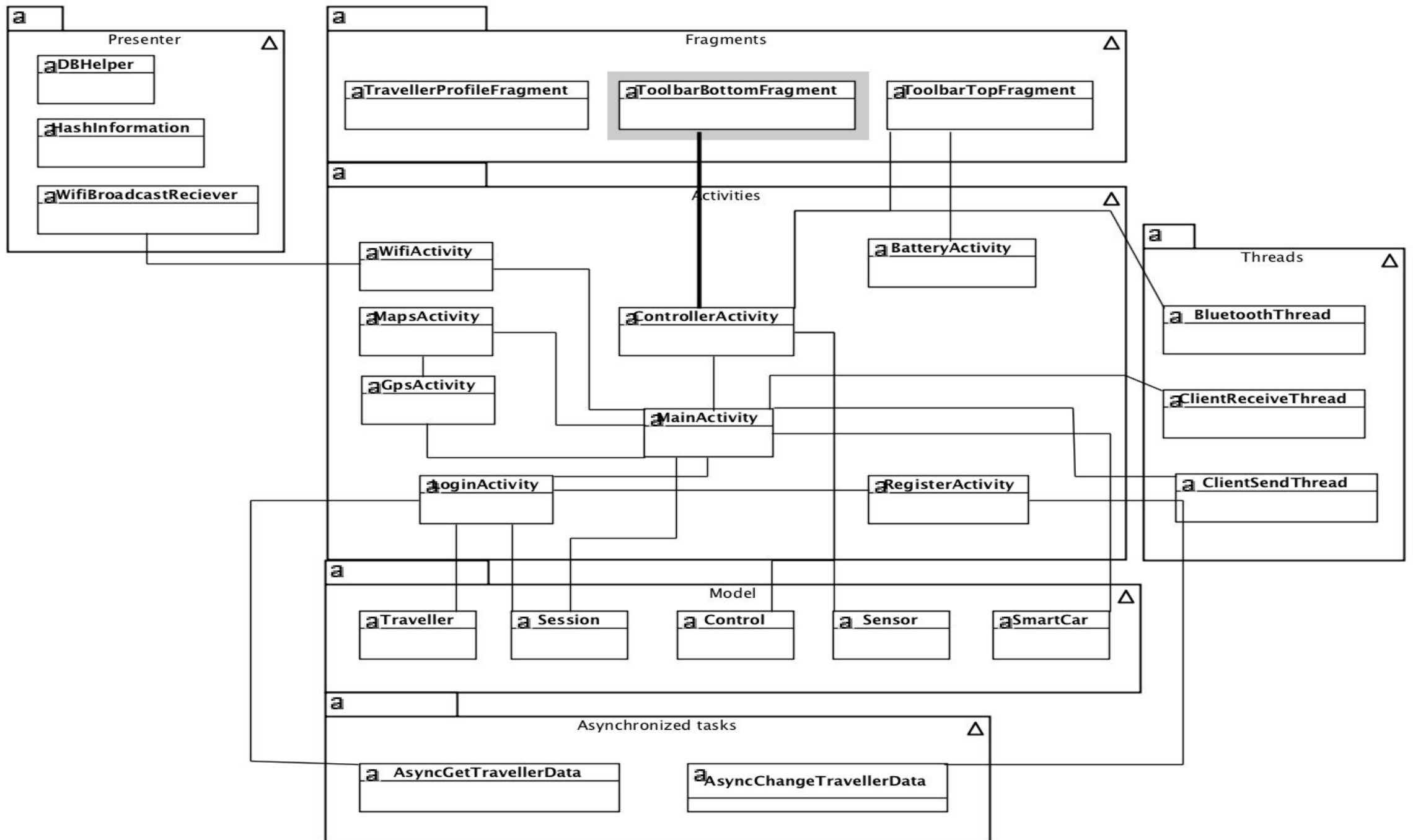
System and Software Architecture

SCHEMATIC

- ORGANIZED COMPONENTS CONNECTIONS
- COLOR-CODED WIRING (COLORS ON THE CAR CORRESPOND TO THE ONES ON THE SCHEMATIC)

CLASS DIAGRAM

- LACK OF ARCHITECTURAL SKILLS
- TRYING TO DIVIDE ARCHITECTURE IN LAYERS (BUSINESS, LOGIC, UI)



System and Software Architecture

SCHEMATIC

- ORGANIZED COMPONENTS CONNECTIONS
- COLOR-CODED WIRING (COLORS ON THE CAR CORRESPOND TO THE ONES ON THE SCHEMATIC)

CLASS DIAGRAM

- LACK OF ARCHITECTURAL SKILLS
- TRYING TO DIVIDE ARCHITECTURE IN LAYERS (BUSINESS, LOGIC, UI)

WORKING PROCESS

- SPRINT PLANNING MEETING
 - SPRINT ITERATION PLANS
- STAND-UPS
- CODE REVIEW
 - REFACTORING
- PAIR PROGRAMMING
- RETROSPECTIVES
- QUALITY ASSURANCE



QUALITY ISSUES

Hardware and Software

- HARDWARE LIMITATIONS
- LACK OF TECHNICAL DEPTH
- COMPLEXITY
- BLUETOOTH CONNECTION
- PYTHON

Process and Planning

- LOFTY IDEAS
- LACK OF KNOWLEDGE
- REQUIREMENT SPECIFICATION
- TIME ALLOCATION

EXPERIENCE & LESSONS LEARNED

- FOCUS ON PLANNING
- INCREASE EFFICIENCY WITH TOOLS
- ESTABLISH UNIFORMED DEFINITIONS FOR CONSISTENCY
- TRY TO CREATE AN ARCHITECTURE
- ESTABLISH STRICTER RULES FOR MEETINGS

