| Name | Email | Division | Research Proposal | Comments |
|---|---|---|---|---|
| Peter Houghton | peter_houghton@trimble.com | CEC | Automated Extraction of GPR Data | Remove the requirement for data extraction interpretation skills |
| Peter Houghton | peter_houghton@trimble.com | CEC | IMU Based Road Condition Monitoring | Determine road condition parameters from IMU data |
| Aviad Almagor | avaid_almagor | MR Program | Rigorous Photogrammetric Approach to MR Object Registration | Register models to scene reality using rigorous adjustment techniques in real time |
| Peter Houghton | peter_houghton@trimble.com | CEC | Toolkit to Learn and Identify Objects in an Image Scene | Build a generic tool kit to identify common objects in a scene |
| Elwyn McLachlan | elwyn_mclachlan@trimble.com | ALK | Management of traffic on a construction site | Analysis of problem and needs, and design of a solution to manage (route/navigate/guide) construction traffic. |
| Preston Bukaty | Preston_Bukaty@Trimble.com | Finance - ERM | Leveraging data from logistics or fleet telematix to shape autonomous vehicle interaction and traffic flows | Thinking about something along the lines of this project from UT Austin: http://www.cs.utexas.edu/~aim/ |
| Ville Rousu | ville.rousu@trimble.com | Structures | AI/Machine learning for construction drawings and modeling. | Tekla Structures is world leading structural modeling software. Users create huge amount of fabrication drawings. These drawings have very large number of repetition. E.g. large fabricator might create 300 000 assembly drawing in year. AI/Machine learning could provide significant savings for this task. |
| Ville Rousu | ville.rousu@trimble.com | Structures | Event data pattern recognition (machine Learning) for predictive systems. | Continue recent Master Thesis of analysis large amount user action/event data. |
| Ville Rousu | ville.rousu@trimble.com | Structures | Drawing information visualization in 3D models. | Research methods to display information. Our marketing video gives ideas for the scope. |
| Isabella Giacomin | isabella_giacomin@trimble.com | Trimble Brazil | Technologies to increase field coverage on big agricultural areas in Emerging Countries | Increase  connectivity in the field to allow farmers to have a quality real-time solution in Emerging countries |
| Jim Coleman | jim_coleman@trimble.com | TPaaS/Corporate | Machine Learning applied to Point Cloud object recognition | Creating ML hypothesis describing discrete inventories of objects for GIS (firehydrants, etc), job site tools would be useful across multiple divisions/business areas. |
| Peter France | peter_france@trimble.com | CTCT | Machine Learning for pose tracking of a construction machine blade | PoseNet is a Cambridge project that learns the geometry of a scene, and then calculates the pose of a camera from a photo of that scene.  This project adapts PoseNet to learn the shape of a blade, and calculate its pose w.r.t. the camera. |
| Norman Smart | norman.smart@trimble.co.nz | Trimble MCS | Investigate jamming mitigation techniques for Trimble receivers | I have noticed a significant number of drive-by jamming incidents at TNZ (sample T02 data showing 9 jamming events in one day is available). Septentrio claims to have jamming resistance in their current receivers, Trimble should provide similar (better of course) capabilities. |
| Jim Coleman | jim_coleman@trimble.com | TPaaS/Corporate | Machine Learning applied to total station prism tracking | Enhance the ability of a total station to track and re-discover a prism if lock is lost. |
| Alistair Wells | Alistair_wells@Trimble.com | CEC | 2nd for Isabella's idea: Auto-extraction of objects from point cloud | |
| Alistair Wells | Alistair_wells@Trimble.com | CEC | Auto-extraction of objects from cell phone imagery | |
| Alistair Wells | Alistair_wells@Trimble.com | CEC | Auto alignment of cell phone images with 3D model for easy change/issue mana | Often the model is not availale or there is a need to align photos with the BIM model for further analysis or for simply identifying where an issue lies. |
| Todd MacMillan | todd_macmillan@trimble.com | MCS | Computer is slow and non-responsive, again | Computers will randomly stop responding to input for long periods of time. Provide tool that can monitor OS, network traffic, virus scanning, etc., and provide reasons and fixes for the slow response. |
| Andy Steere | andys@sketchup.com | AEC | Enhance Sefaira to include acoustical modeling analysis to allow users to assess the viability of a design from an auditory perspective. | Can we use SketchUp, Sefaira and perhaps open source acoustical modeling software to increase the productivity of the rooms that are being designed or refurbished? For example, developers need uninterrupted blocks of time without visual and auditory distractions. How can we use these tools to increase their productivity? |
| Denis Mequinion | denis_mequnion@trimble.com | RE&WS | Indoor positioning on consumer tech. | Devise method for most accurate indoor positioning from consumer tech (smartphones.. activity trackers ?) based on a composite representation of the environment obtained from the device's sensors (magnetometers, acceleration, wifi, Bluetooth ... ) . Possibly rely on machine learning to learn what to disregard / rely on and report position. |