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Dear Colleagues and Friends,

In this past month, I am absolutely thrilled about the successful launch of the Berkeley Deep Drive (BDD) program, within PATH. I am simply amazed that PATH Co-Director Trevor Darrell has managed, in such a short amount of time, to assemble a significant consortium of companies around deep learning for automotive. As most of you know, Trevor joined PATH in Fall 2015, and now a few months later – with the help of PATH Co-Director Tom West and CITRIS Robotics' Initiative Faculty Director Ken Goldberg – he has built this consortium that will steer PATH's research into the Silicon Valley ecosystem, where deep learning has become one of the hottest commodities.

This new step at PATH is not without similarities to the birth of Automated Highway Systems, when Professor Adib Kanafani was ITS Director and Professor Pravin Varaiya became the PATH Director. One of the many missions they carried out was to build a coalition that ultimately yielded the famous Automated Highway System, which for many years became the flagship program at PATH and ITS. It feels in the present case a triple rebirth: first, just like in the 1990s, as the state of controls, robotics and automation made the emergence of the first AHS possible, deep learning today provides new capabilities that will enable a new generation of automated vehicles; second, again, PATH finds itself at the forefront of technology and science, leading the way in an ecosystem in which other similar institutions have not yet positioned themselves in this space; third and finally, it is a real pleasure to see team members of the first AHS team join this new effort, in particular Professor Jitendra Malik, who gave an introductory lecture at the BDD launch on March 21, 2016 about the history of the field since the pioneering work of Ernst Dickmanns. We look forward to seeing renewed faculty involvement at PATH and many new and familiar faces engage in automotive research, in particular Alyosha Efros, Anca Dragan, Pieter Abbeel, and an entire new generation of researchers who arrived – just like me – long after the first AHS.

March 21's BDD launch brought together 22 principal investigators from PATH, the Electrical Engineering and Computer Science Department, Center for Information Technology Research in the Interest of Society (CITRIS) robotics, and the Berkeley Vision

and Learning Center (BVLC) and the nine industry partners sponsoring the project: Audi/VWofA, Bosch, Ford, Toyota, Samsung Nvidia, Panasonic, Honda and Qualcomm to begin the conversation of guiding the next generation of research on deep automotive perception through the integration of vision and vehicles. Researchers presented many of the first round projects, chosen by an advisory board of industry partners, at the event thorough posters sessions and formal presentations, allowing open discussion between researchers and industry investors during the event. Researchers and representatives from companies currently working in the field alike were eager to talk about the possibilities of where this research could go and what it can do. BDD research will focus on on several themes, including: low power and embedded Computer Aided Fast Fabrication Environments (CAFFE) development; efficient pedestrian detection; pedestrian intent detection; Deep Driving Control policies; and scene classification and scene affordance estimation.

Congratulations Trevor, and long life to deep learning for automotive at Berkeley!

Speaking of congratulations, ITS is launching a new way to thank the people who go above and beyond for ITS and its Centers. We will be holding our first awards ceremony Wednesday, May 11, 4-5 p.m. in the Banatao Auditorium, third floor of Sutardja Dai Hall with a reception to follow in the Kvamme Atrium. We look forward to ending the academic year with a celebration of the good work we and our partners do! Please look for more information as this event develops!

Go Bears! Alexandre Bayen Professor and Director of ITS Berkeley

News



Driving the next generation of deep automotive perception research, PATH recently launched the Berkeley DeepDrive (BDD) Industry Consortium to investigate state-of-the-art technologies merging computer vision and machine learning for automotive applications. Read more.



TE Open House Welcomes Prospective Students

ITS Berkeley warmly welcomed 13 prospective students during the Transportation Engineering Open House Friday April 8. The Smart Cities Roundtable, part of the Transportation Seminar series, capped the day off with presentations and discussion with leaders in the field. Read more.



Brathwaite, Campbell **Receive Top Honor for Teaching**



CEE faculty and Graduate Student Instructors are renowned for their commitment to quality instruction, and eight CEE GSIs were selected as recipients of Berkeley's Outstanding Graduate Student Instructor Award for 2015-16, among them are ITS's Timothy Brathwaite and Andrew Campbell. Read more.



Save the Date: ITS Awards

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Ross Presents 2016 Martin Wachs Lecture

Director of Georgia Institute of Technology's Center for Quality Growth and Regional Development (CQGRD), Catherine Ross, presented the ninth annual Martin Wachs Lecture, March 17, 2016., The lecture focused on a transportation agenda for the global era. Read more.

Headlines

Transportation Sustainability Research Center Co-Director Susan Shaheen talks to the San Francisco Chronicle about Uber, Lyft may face new rules in California.

UC Berkeley's PATH joins with Nissan, Savari, and the City of Sunnyvale to announce <u>Real-World V2X Testbed</u>.

Transportation Sustainability Research Center's Elliot Martin talks to City Lab on Why Bike-Share Is Really Very Safe.

Sh Transportation Sustainability Research Center's Susan Shaheen talks to the New York Times about Car-Pooling Helps Uber Go the Extra Mile.

Assistant Professor of Civil and Environmental Engineering Scott Moura presents Talk on E-Mobility/Grids at Smart Cities Symposium in Abu Dhabi.

TSRC Co-director Susan Shaheen talks talks to Time Magazine about This Is How Much You Could Save If You Got Rid of One of Your Cars.

Events

ITS Berkeley features a weekly Friday Transportation Seminar Series with leading researchers and practitioners in the transportation field.

- UC Berkeley's Lewis Lehe will present "Pricing Downtown Congestion" April 22 at 4-5 pm in 290 Hearst Memorial Building as part of the Transportation Seminar Series. Cookies and beverages will be served at 3:30 pm.
- UC Berkeley's Mike Taptich presents "Measuring Low-Carbon Accessibility in the United States: Trucks vs. Trains" April 29 4-5 pm in 290 Hearst Memorial Building as part of the Transportation Seminar Series. Cookies and beverages will be served at 3:30 pm.
- UC Berkeley's Frank Proulx will present "Leveraging Bicycle Demand Data for Risk Evaluation" on May 6 at 4 p.m. in 240 Bechtel for the Transportation Seminar. Join us for beverages and cookies at 3:30 p.m.
- ITS will hold its first <u>awards ceremony</u> Wednesday, May 11, 2016, 4-5 p.m. in Banatao Auditorium, third floor Sutardja Dai Hal, reception to follow, Kvamme Atrium.
- UC Berkeley's Han Cheng will present "Hierarchical Urban Transit System Design for Optimizing Greenhouse Gas Emissions and Costs" and UC Berkeley's Allan Ogwang will present "Optimal Cracking-Threshold Resurfacing Policies in Asphalt Pavement Management to Minimize Costs and Emissions" for the Transportation Seminar on May 13 at 3 p.m. int 290 Hearst Memorial Mining Building. The TE Graduation Reception will follow at 5:30 p.m.
- Join us for the <u>Hydrogen and Fuel Cell Student Symposium</u> May 17, 2016 1 5 pm David Brower Center, Berkeley.

