One Line Project Description*

A data visualization project using algorithmic research methods to analyze and work with onboard vehicle data.

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The project draws its methods from algorithmic research and from data visualization techniques and aesthetics. In doing so, it enacts a contemporary althusserian mode of historical and ideological enquiry while also drawing out the joys and technical sophistication of data visualization workflows. Beyond that, it is also an exercise in working with complex, sometimes deprecated, software and hardware objects in the form of OnBoard vehicle computers and their scanners. The result is an overarching study on protocols, the transportation and cultural technology of automobiles. It is also an educational project, seeking not only to make art with this workflow and to write a research paper about it but also to teach this workflow in an embedded social art environment with eyes towards the healing effect of art making and the empowering effects of coding.

Please provide an overview of your personal and professional background. How does your experience inform your project?*

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We are artist educators working at the secondary and post-secondary levels. We share a collective interest in technology and social engaged art practice. With interdisciplinary expertises like ecology, philosophy, performance, architecture, and electronics we together form a rich fabric of educational capacities and artistic sensibilities. As a unit we have a strong sense of socially engaged

practice via interests in psychoanalysis, community, and counter-cultural approaches to conflict resolution, selfhood, and politics.

How does your proposed project amplify, challenge, or build upon existing or real-time data to tell compelling stories?*

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The project works with vintage automobiles to translate OnBoard computer CSV data to P5JS to generate live and static visualizations that facilitate and are informed by data analysis and forensics of the automotive system. We simultaneously tell two stories: the story of Fordist assembly as a precursor and parallel to the modern computer and the story of an individual automobile, its caretaking, and its potentials for self-expression, healing, and self understanding.

Does your project incorporate Processing, p5.js, or the p5.js sound library? If so, please elaborate how you're planning on working with Processing Foundation's core software.*

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We plan on writing a p5.js library to facilitate data translation and styling of ODB-II onboard computer data. Emphasis here is on technical sophistication as well as directly on educational accessibility, to create a plug-and-play library through which vehicle data can seamlessly integrate into a stylish programming sandbox.

The fellowship program emphasizes community engagement and collaboration. Who are your stakeholders/audience? How do you plan to engage them and the Processing Foundation community during and after the fellowship?*

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Our stakeholders are threefold. We address the community surrounding the Arts, Letters, and Numbers arts residency and community center, the members and facilitators of the Transformation project - a project associated with ALN that brings together advocacy groups, artist educators, and folks suffering and moving on from opioid dependency - and the broader Processing community including particularly those interested in automobiles, historical research, and machine and human care.

What creative/technical/professional questions are you hoping to resolve through this fellowship? In addition to a stipend, the Processing Foundation Fellowship Program provides non-monetary support such as consultations, workshops, and access to a broader network. How might these resources help you realize your long-term growth?*

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Technically, one interesting issue is the absence of memory systems in these vintage cars. Memory was only a feature on OnBoard computers with the introduction of the COD Protocol in the early 2000s and more recently with telematics and electronic vehicle data. Because of this, to get a deep sense of a vehicles data history requires a construction of the data graph through which to reconstruct certain parameters according to live states and other forensics like material analysis. This is an incredibly rich question regarding computing in a general sense as well as in the growing field of digital forensics. More pointedly, we are interested in some of the technical aspects of this question as they relate to our project's theme of care, self-diagnostics, and regrowth. For instance, in regarding the data set as inherently graph-based, we might ask how the whole is greater than the sum of its parts, or how a given parameter like engine temperature can help us to infer the state of the exhaust system in order to better understand a problematic behavior in the transmission. We argue that this kind of structured inference is an inherent capacity of digital systems that can be incredibly therapeutic when abstracted from an inert object like an automobile into the field of cultural expression and its support of the identity formation process. This questions may also be assimilated into a deeper research

question that we share, namely as to how these technological processes of structured inference and their infiltration into social processes of identification take place organically over time and thereby demarcate in aggregate the character of different historical epochs. By reconstructing an automobile ODB-II system from the late 1990s, we argue that we are studying the material bases of social processes from that time period. In doing so, we are keenly interested in the therapeutic aspects of epochal reconstructions and how these vast time and space scaled relate to individual experience. This set of questions informs all of shared work as researchers in digital cultures and as artists working with technology.

Project Timeline*

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Please provide an overview of your project timeline and milestones.

The first tests will take place in the first half of the summer months. During this stage we will test ODB-II scanners with several vehicles to achieve a solid workflow from computer to CSV to p5.js. Following this initial stage we will apprentice with a local auto shop connected to ALN to learn the basics of OnBoard diagnostics, start to develop a p5 library, and begin the development of workshops. By August, we will be working deeply with the workflow, teaching it to each other and to interested artists through a series of photo-workshops connected to the Craft 1o1 community curriculum at ALN, and installing live-data workshops created with the workflow in the CRAIVE immersive lab at RPI under the advisement of Carla Leitao and Ed Keller. We will then push towards authoring the library at the end of August and in rolling out our first Transformation Project workshop during the program session in November. Publication on the Future Anterior article on Architectural Recovery will take place following these stages during reading and writing phase that starts during the ALN session but that does not wrap until after the New Year.

Budget Proposal*

Our budget will go towards vehicle acquisition, ODB-II and CAD sensors, and team housing and meals. We anticipate that half of the funds will go towards materials acquisition and auto care ($5000) and another ($1000) towards workshop materials like food, scholarship funds for participants and space

rentals in collaboration with ALN and RPI, and the last ($4000) to boarding fees for the team.