Dear Editors and Reviewers,

We hereby submit a paper titled “Network-Clustered Multi-Modal Bug Localization" to Transactions on Software Engineering (TSE) journal. The paper is an extended version of our paper entitled “Information Retrieval and Spectrum Based Bug Localization: Better Together” presented at the ESEC/FSE 2015 conference.

The major extensions that we made are as follows:

* We extend AML (presented in ESEC/FSE 2015) to NetML. In the nutshell, we optimize the integrator component of AML by developing a new adaptive learning procedure based on Newton update and a customized convex loss function. Details of NetML’s integrator component are provided in Sections 3.1, 3.2, and 3.3.
* We introduce two new components in NetML that compute similarities between bug reports and methods, and between two different methods. Details of these modules are presented in Section 3.5.
* We revise Section 4 (Experiments) to present experiment results demonstrating the effectiveness of NetML in various settings. We also include a comparison between NetML and AML as well as other baselines. NetML outperforms the best performing baselines (i.e., AML) by up to 48.39% in terms of the number of bugs successfully localized when a developer inspects the top 1 methods.

Aside from the above major extensions, we have also revised many sections to improve the exposition of the paper. We believe we have extended the conference paper substantially (by more than 30%).

Thank you for considering our paper for publication.

Yours Sincerely,

Thong, Richard, Duy, and David.