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ONNX Roadmap Suggestions

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C API for C++ ONNX components

- The ONNX project provides protobuf definitions, an op spec, an IR spec and utilities for working with the protobufs
- The utilities are Python wrapped around a C++ core but they provide useful functionality for all systems which interact with ONNX
  - As other language ecosystems build ONNX tooling they need these utils in their languages
- Model checking and modification is core functionality that would be useful to expose via a C API
  - In Tribuo we're adding ONNX export support, but need to use ORT to validate the model exported correctly
  - I think the situation is similar for ML.Net
- C APIs are much simpler to interop with than C++ APIs, and many languages have automatic ways of binding to them
  - Failing that, if the C++ API is considered a stable entry point then some more documentation would make it feasible to use without Python

Writing ONNX models from languages other than Python

- Both ML.Net and Tribuo write ONNX protobufs from other languages (C# and Java respectively)
- Each of them has accrued a set of helpers to build an ONNX model
  - ML.Net - https://github.com/dotnet/machinelearning/tree/main/src/Microsoft.ML.OnnxConverter
  - Tribuo - https://github.com/oracle/tribuo/tree/main/Core/src/main/java/org/tribuo/onnx
- This functionality is also available in onnxconverter-common used in ONNXMLTools and other places - https://github.com/microsoft/onnxconverter-common
- There are three extant implementations of the same functionality, none of which appear to be owned by the ONNX project directly
  - The Java one is still under construction as we built out Tribuo's support so it's not complete
- I think it would be beneficial to the community to have a common source for this code, where one team can ensure it follows the spec
  - And if we put a C API on it everyone can easily use it in whatever language


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