In joint work with Carlos E. Kenig, we prove a Carleman inequality of the form

$$||e^{\beta\varphi_\lambda(x_1)}u||_{X'} \leq C||e^{\beta\varphi_\lambda(x_1)}(i\partial_t + \Delta_x)u||_X + C[||e^{\beta\varphi_\lambda(x_1)}u(.,-1)||_{L^2(\mathbb{R}^n)} + ||e^{\beta\varphi_\lambda(x_1)}u(.,1)||_{L^2(\mathbb{R}^n)}]$$

for suitable functions $u : \mathbb{R}^n \times [-1,1] \to \mathbb{C}$, any $\beta \geq 0$, and any $\lambda \geq \Lambda(\beta)$. The spaces X and X' are Strichartz spaces and the function $\varphi_\lambda : \mathbb{R} \to \mathbb{R}$ is smooth, $\varphi_\lambda(x_1) = x_1$ if $x_1 \leq \lambda$ and $\varphi_\lambda(x_1) = C_\lambda$ if $x_1 \geq 2\lambda$. We use this Carleman inequality to prove uniqueness of solutions of the nonlinear Schrödinger equation

$$(i\partial_t + \Delta_x)u = Vu + F(u), \tag{0.1}$$

where V is a potential and F is a nonlinear term. Under suitable assumptions on V and F we prove that if u_1 and u_2 are solutions to (0.1) in a suitable function space, and if u_1 and u_2 agree at times $t = 0$ and $t = 1$ in a half space, respectively in the complement of a convex cone, then they agree at all times in a half space, respectively in the entire $\mathbb{R}^n$.